

Ecological Appendix to a CEMP (eCEMP)

June 2026

Project Reference: PR-26-0123

Larkins Farm
Gellings Lane
Knowsley
L34 9EN

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1.0 Introduction & Context

- 1.1 As part of a granted planning application with Knowsley Council (Ref.: 23/02676/FUL¹) at Larkins Farm, Tyrer Ecological Consultants were commissioned to undertake a Preliminary Ecological Appraisal (PEA) in April 2023 in tandem with a Biodiversity Net Gain (BNG) Assessment (see **External Appendices**).
- 1.2 Proposals are understood to involve the construction of a solar farm installation on arable land. See **Figure 1.1** for a proposed site plan.

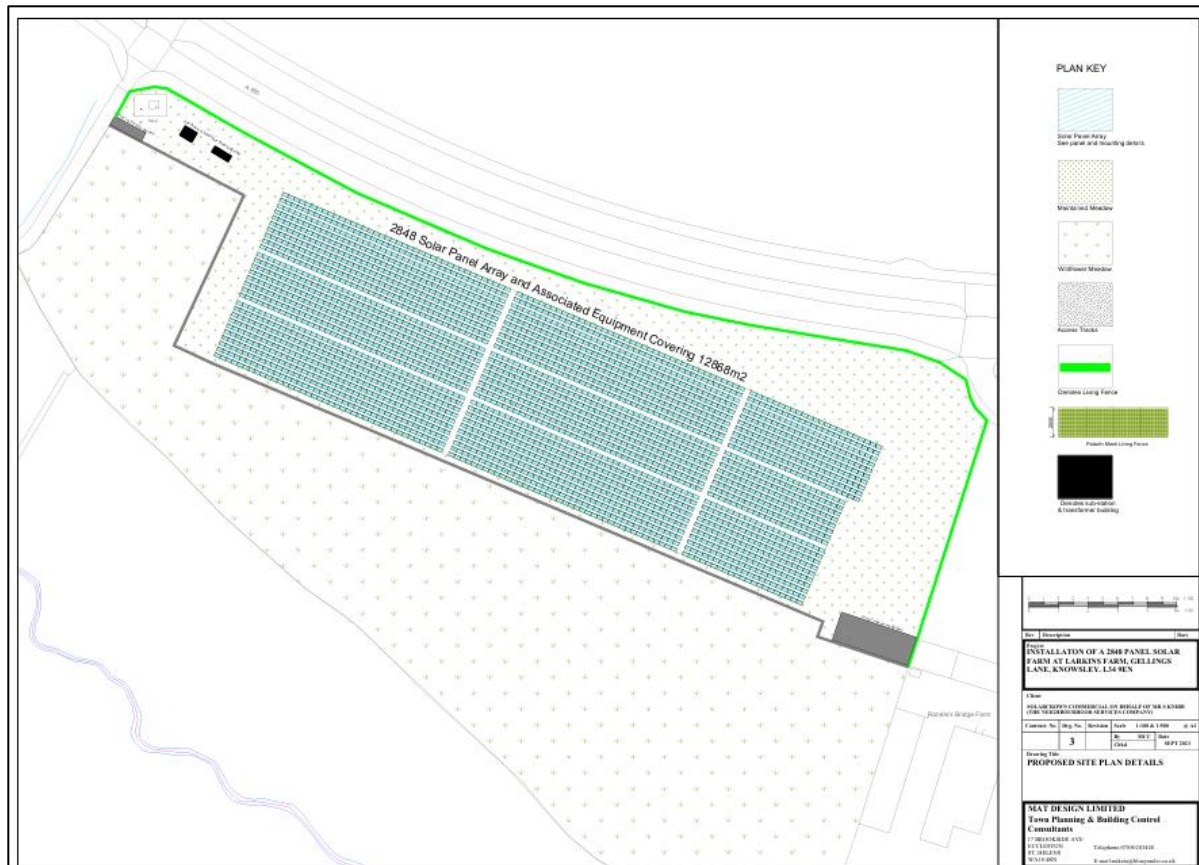


Figure 1.1 – Proposal Site Plan (MAT Design Ltd)

- 1.3 Consent was granted in July 2024, subject to a number of conditions. **Condition 4** of the granted decision notice states the following (with only matters relevant to ecology **bolded** within the below text):

“Prior to commencement of development, a Construction Environmental Management Plan (CEMP) shall have been submitted to and approved by the local planning authority. All works shall be carried out in accordance with the approved details and retained as such hereafter.

The CEMP should address and propose measures to minimise the main construction effects of the development and, amongst other things, should include details of ecological mitigation, construction and demolition waste management, pollution prevention and soil resource management. The CEMP would normally be expected to include the agreed method statements to mitigate or avoid adverse environmental impacts including:

a. Measures to protect amphibians (paragraph 12);

¹ See: <https://planapp.knowsley.gov.uk/online-applications/applicationDetails.do?activeTab=externalDocuments&keyVal=S1AGF5IXGN100>

- b. Measures to protect terrestrial mammals (paragraph 14);
c. Measures to protect breeding birds (paragraph 16); and
d. Standard pollution control measures to protect all retained habitats, including wetlands.*

The Construction Environment Management Plan (CEMP) is to include the use of noise reduction measures such as those referred to by the applicant (Echo barriers) during all piling activities”.

- 1.4 Tyrer Ecological Consultants Ltd were therefore recommissioned by MAT Design Ltd to produce an Ecological Appendix to a CEMP (eCEMP) to assist with discharging the above condition.

The Site

- 1.5 Larkins Farm (referred to in-part as “the application site” and “the site”) totals an approximate area of 4.88ha and is situated approximately 8.4km north-east of Liverpool City Centre. The site is an active arable farm with tussocky grassland margins. A single native hedgerow is present within the site along the western boundary, that is likely to meet the UKBAP Priority Habitat definition.
- 1.6 Immediate surrounding habitats include an area of priority lowland mixed deciduous woodland to the north-west, a separate, larger expanse of lowland mixed deciduous woodland with grassland meadows, rides and dense scrub to the north and north-east, expansive grazing pasture to the south-east with seasonal pools, and scrub, open water and running water within 200 metres. In the extending habitat there are also additional woodlands such as Craven Wood 220 metres to the south linking to Dam Wood 820 metres south-west. Wider environs include open playing fields, linear border features such as hedges, treelines and ditches, ponds and fragments of lowland heath and acid grassland along the M57 motorway. In terms of urbanisation, Knowsley Business Park, featuring a range of industrial and commercial warehouses, is present beyond the M57 to the north-east, the residential expanse of Kirkby is present to the north and further residential housing estates are present to the west beyond the East Lancashire Road and Croxteth to the south.
- 1.7 A single statutory designated site is located within 2.0km, shown in **Table 1.1** below:

Table 1.1 – Statutory designated site located within 2.0km of the site

Site Name	Distance from site	Features of Conservation Importance
Croxteth Local Nature Reserve (LNR)	0.2km south	An 86.45 hectare site and the oldest example of mature tree cover in Liverpool. The LNR was created from the former Mull Wood plus other woodland areas such as Cocked Hat Wood, Dam Wood, The Wilderness and Icehouse Woods together with some agricultural land in the park. The reserve has woodland, park and pasture, rough grassland, wetland, several ponds and is bounded by the River Alt. A variety of bats and birds breed in the woodlands and the ponds are good for plants such as water dropwort and dragonflies.

- 1.8 Several Local Wildlife Sites (LWS) are located within 2.0km of the application site boundary; their names, distance from the site and primary features for being afforded their designations are listed in **Table 1.2** overleaf.

Table 1.2 – LWS within a 2.0km radius

LWS Name	Distance from site	Features of Conservation Importance
Croxteth Park, River Alt and adjacent sites	70m south	<u>Habitats</u> Mixed deciduous woodland, wood-pasture and parkland, ponds, marshy grassland, and unimproved neutral grassland. <u>Species</u> Tubular Water-dropwort (<i>Oenanthe fistulosa</i>), Black Bryony (<i>Tamus communis</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Common Club-rush (<i>Schoenoplectus lacustris</i>), Cyperus Sedge (<i>Carex pseudocyperus</i>), Marsh Valerian (<i>Valeriana dioica</i>), Small Pondweed (<i>Potamogeton berchtoldii</i>), Trailing St. Johns-wort (<i>Hypericum humifusum</i>), Water-purslane (<i>Lythrum portula</i>).
Knowsley Brook	0.4km north	<u>Species</u> Water vole (<i>Arvicola amphibius</i>).
Howards Pits Knowsley	0.7km east	<u>Habitats</u> Single species dominant swamp, unimproved neutral grassland, and standing water. <u>Species</u> English Bluebell and Black Bryony.
Kraft Operational Land Knowsley	0.9km north-east	<u>Habitats</u> Unimproved neutral grassland and marshy grassland. <u>Species</u> Grey Club-rush (<i>Schoenoplectus tabernaemontani</i>), Lady's mantle (<i>Alchemilla vulgaris</i> agg.), Dewberry (<i>Rubus caesius</i>), Creeping willow (<i>Salix repens</i>), Small nettle (<i>Urtica urens</i>).
Otis Meadow Knowsley	1.3km north-east	<u>Habitats</u> Damp and dry grassland and mixed scrub.
Meakin's Pits Knowsley	1.3km south-east	<u>Habitat</u> Plantation woodland.
River Alt and adjacent sites through Gilmooss	1.3km north-west	<u>Habitats</u> Mixed broadleaved woodland and marshy grassland. <u>Species</u> Water vole.

The Roughts	1.5km south-east	<u>Habitat</u> Mature broadleaf woodland.
Kirkby Brook Knowsley	1.6km north-west	<u>Species</u> Water vole.
Little Wood Knowsley	1.8km south	<u>Habitats</u> Standing water <u>Species</u> English Bluebell, Cyperus sedge.

- 1.9 The key findings from the PEA included the need to protect adjacent wetland sites to the southern boundary, associated with Croxteth Brook; as well as impacts to amphibians, terrestrial mammals, and breeding birds.

Key Ecological Receptors

- 1.10 The primary ecological receptors identified within and in proximity to the site include a strip of tussocky modified grassland to the north and east margins, with an onsite non-priority hedgerow to the western boundary. Adjacent to the site lies areas of woodland to the west and wetland habitat to the southern boundary that filters into the Croxteth Brook and wider 'Croxteth Park, River Alt and adjacent sites LWS'. These habitats were identified as offering suitable opportunities for a range of ecological features including bats, breeding birds, amphibians and terrestrial mammals.
- 1.11 The proximity of the site to the Croxteth Brook and 'Croxteth Park, River Alt and adjacent sites LWS', with its associated riparian wetland habitat is the most relevant ecological constraint. **Table 1.3** below indicates key operations whilst **Table 1.4** highlights construction related activities, with reference to the above ecological receptors.

Table 1.3 – Operations to be undertaken with a risk of impacting the ecological receptors

Operation	Potential impact on ecological receptors
Application of manure, fertilisers and lime during soft landscaping	During any landscaping, use of nutrient-enriching fertilisers in proximity to the southern boundary could lead to degradation of the adjacent Croxteth Brook and associated Croxteth Park, River Alt and adjacent sites LWS as well as encouraging the growth of unfavourable vegetation.
Dumping, spreading or discharge of any materials	Any materials either to be used in construction or extracted during excavation have the potential to impact the identified habitats, as well as form suitable refugia / hibernacula for amphibians and terrestrial mammals.

Operation	Potential impact on ecological receptors
Destruction, construction, removal, rerouting or re-grading of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks including soil and soft rock exposures or the laying, maintenance or removal of pipeline and cables, above or below ground.	The proposals require groundworks involving clearance of grassland and arable crop habitat on site, and excavation of soil, to facilitate the creation of hardstanding and/ or citing of solar panels. These areas could provide suitable opportunities for foraging and commuting to various species of terrestrial mammals, amphibians and invertebrates.
Storage of materials on the site.	Unless properly demarcated, construction or excavated materials that are placed in areas adjacent to favourable habitat may act as hibernacula for a variety of species hence their eventual removal could impact species such as mammals and amphibians.

Table 1.4 – Construction-related activities which could harm the ecological receptors

Activity	Potential impact on identified habitats
Construction	During the proposed construction works, dust and runoff could be created which may then in turn impact the adjacent Croxteth Brook and wider Croxteth Park, River Alt and adjacent sites LWS and therefore the section designated as a LWS by way of nutrient enrichment and of increased sediment in the brook.
Litter	Any waste created by having a workforce on site could be blown into the adjacent brook and therefore LWS, as well as the floral and faunal species within and adjacent to the brook.
Vegetation clearance	Removal of vegetation on site could impact on breeding birds on site, as well as on terrestrial mammals, amphibians and invertebrates.
Lighting	Harsh lighting directed towards the adjacent habitats and left on overnight has potential to impact upon foraging and commuting bats to the borders of the site.

2.0 Site-relevant Legislation

2.1 Relevant legislation considered for the purposes of this report includes the following:

- Conservation of Habitats and Species Regulations (amendment) (2017) (as amended),
- Countryside Rights of Way (CRoW) Act (2000),
- Natural Environment and Rural Communities (NERC) Act (2006),
- National Planning Policy Framework (2024) (as last revised),
- Protection of Badgers Act (1992),
- The Invasive Alien Species (Enforcement and Permitting) Order (2019),
- Wildlife and Countryside Act (1981) (as amended).

2.2 These acts entail relevance to both protected species and habitats. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species / group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting / with eggs / young); some species may receive full protection within the EU (e.g. otter), whereas others may be protected solely on a national basis (e.g. grass snake).

2.3 Legislature appropriate to each species and habitat specifically respective to the site, and the relevance of said legislation is provided below (see **Table 2.1**).

Table 2.1 – Site-relevant legislation

Species, Species Group or Habitat	Relevant Legislation	Level of Protection
Bats	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended)	All British bats and their roosts are afforded full protection from damage/destruction and bats may not be injured/killed/taken at any life stage. Once identified, roosts are protected whether the bat is in occupation or not.
Birds (Breeding)	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected. Birds listed on Schedule 1 Wildlife & Countryside Act (1981) (as amended) are afforded a greater level of protection.
Great Crested Newt (GCN)	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended)	Great Crested Newts (GCN's) are fully protected from disturbance, killing, injuring or possession at any life stage. Confirmed breeding ponds and resting places are afforded the same protection.

Species, Species Group or Habitat	Relevant Legislature	Level of Protection
Invasive Plant Species	Wildlife and Countryside Act (1981) (as amended) The Invasive Alien Species (Enforcement and Permitting) Order 2019	Species listed within Schedule 9/Schedule 2 as invasive, including Himalayan balsam (<i>Impatiens glandulifera</i>), carry notoriety regarding development. The Acts make it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.
Priority Habitats	NERC Act (2006)	In the UK a number of habitats are recognised as national priorities for conservation under s.41 of the NERC Act; these include deciduous woodland and hedgerow.
Water vole	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	Water voles are fully protected against intentional killing, capture or injury and intentional or reckless disturbance, obstruction, damage or destruction of their burrows.

Policy

2.4 Paragraph 186 of the National Policy Planning Framework (as revised in December 2024) states:

“When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons² and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”

² For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

- 2.5 The following policies from the Knowsley Council Local Plan³ (January 2016) and are considered relevant to this eCEMP (see **Table 2.2** below):

Table 2.2 – Relevant policies as extracted from the Knowsley Borough Council Local Plan

Policy Title	Summary
CS8: Green Infrastructure	Knowsley's existing green infrastructure will be protected, managed, or enhanced, through the identification, protection and enhancement of strategically important areas of greenspace. In relation to the LCR, the Council will work with partners to help deliver local and sub-regional programmes, initiatives and strategies to enhance Green Infrastructure.

³ See: <https://www.knowsley.gov.uk/planning-and-development/planning-policy/adopted-documents>

3.0 Risk Assessment

- 3.1 The following risk groups (RG's) aim to identify the most potentially damaging construction related activities at this site in the absence of mitigation.

Risk Group 1 – Vegetation clearance

- 3.2 Any work relating to the clearance of vegetation at the site including grassland, arable crop, and hedgerow.

Moderate risks – During the breeding bird season, all arable crop, grassland or boundary hedgerows have the potential to support breeding birds, hence disturbance / clearance during this period could cause impacts if not mitigated / supervised.

Risk Group 2 – Setting up a works area

- 3.3 Any works facilities to be erected on the site, e.g., materials, tools, chemicals, generators, fuels and potential contaminants may be stored on the site. Additionally, there is potential for additional lighting to be installed.

High risks – Harsh dust, noise or lighting effects can damage habitats and detrimentally affect wildlife. Pollution and contaminants can be spread from site.

Moderate risks – Irresponsible storage and siting of bulky equipment and work tools can create shelter for wildlife and lead to risk of injury/death/disturbance. Spread of litter into adjacent sites.

Risk Group 3 – Groundworks

- 3.4 Excavations will be created in the works area to lay solar panel foundations, install services and create new landscape features. Irresponsible storage of excavated materials may lead to overspill into the adjacent priority deciduous woodland to the west and wetland habitat to the south.

High risks – Potential to disturb/entrap wildlife by leaving trenches open overnight, death or injury to individual fauna during excavation works. Pollution and contaminants spread into nearby Local Wildlife Site.

Risk Group 4 – Construction

- 3.5 The construction activities have the potential to create dust, noise, run-off and light pollution.

High risks – Construction related damage to the nearby woodland and wetland, harsh dust, noise or lighting effects can damage habitats and detrimentally affect wildlife. Pollution and contaminants can be spread from site.

Moderate risks – Spread of litter into adjacent sites, in addition to the storage of materials on site that could inadvertently create refuge opportunities for wildlife.

Risk Group 5 – Nutrient Enrichment & Pollutants

- 3.6 Any activities which may result in nutrient run off, pollution and / or increased sedimentation to Croxteth Brook to the south

Moderate risks – Potential deposition of vegetative material and / or construction related material as well as the incidental run-off of vegetative material and / or construction related

4.0 Practical Measures to be Adopted

Timings

- 4.1 All clearance works should be undertaken outside of the breeding bird season (March-August inclusive) unless it can be demonstrated by a suitably qualified, professional ecologist that breeding birds are absent 24 hours or less before those works.
- 4.2 On a day-to-day basis, works should be undertaken during daylight hours so as to reduce the likelihood of bats, common amphibians and nocturnal birds being disturbed by construction related activities.

Pre-commencement - Appointed Ecological Clerk of Works (ECoW)

- 4.3 A suitably experienced ecologist will be appointed prior to work commencing and communication details will be provided to the Site Manager and other site personnel. Point 3.24 of the British Standards Publication 42020:2013 defines a professional ecologist as:

“a person who has, through relevant education, training or experience, gained recognised qualifications and expertise in the field of ecology and environmental management.”

- 4.4 The ECoW will be on site during the following times:
- to deliver the toolbox talk prior to work commencing,
 - to undertake pre-commencement checks of habitat features for priority species, and,
 - as and when needed if a protected species, or other wildlife, is found on site.

Pre-commencement - Toolbox talk

- 4.5 Site operatives will be given a toolbox talk prior to the commencement of any site preparation or construction work. The toolbox talk should be carried out by a suitably qualified appointed Ecologist / Ecological clerk of works (ECoW), as outlined in paragraph 4.2 above.
- 4.6 The Toolbox talk will include, as a minimum:
- Before any works commence at the application site all site contractors/stakeholders will be briefed by ‘Toolbox’ talk of the potential for wildlife species to occur on site, what to look out for and what to do in the event that animals are found. This talk should cover ID aids, the presence of the nearby Local Wildlife Site, and the legal ramifications of an offence through reckless behaviour;
 - Sensitive working practices to avoid impacts to sensitive habitats and species;
 - Cover the key contents of this eCEMP;
 - Cover general good-practice principles for conducting site work in a manner which is sensitive to ecology and environmental matters;
 - Provide a Q&A opportunity with the Ecologist / ECoW;
 - Include a read & understood signing form, dated, and an audit form; and
 - Following the toolbox talk an “Environmental Champion” will be appointed, likely to be the Site Manager / Lead Contractor, responsible henceforth to report to the ECoW throughout the work schedule at key stages in the absence of ecological supervision.

Lighting

- 4.7 Bats and their roosting sites receive a high level of legal protection under the terms of the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2019 (EU Exit). A suitably qualified lighting technician should be contracted to provide an appropriate lighting plan; this lighting plan should bear the following in mind and apply guidance from the Bat Conservation Trust (BCT) (see overleaf).
- 4.8 Any construction related artificial lighting will not be aimed directly outward of the site and will instead be aimed into the site and away from existing semi-natural habitat features to avoid illuminating ecologically valuable habitat. Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging/commuting bats in the landscape, particularly if increased light spillage occurs in areas that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the surrounding treelines. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Lighting Guidelines for further information.

Appropriate luminaire specifications: Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered – See ILP GN01.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion-sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand.
- Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

Reasonable Avoidance Measures (RAMs) for terrestrial mammals and common amphibians

4.9 Development related activities on the site, such as storage of construction materials and open excavations, may potentially affect terrestrial mammals and common amphibians that may inhabit the local area and use these features as temporary shelter or resting places. As a result, safeguards must be applied to protect these species from harm at the construction site; the Method Statement below outlines sequential measures to be implemented to ensure impacts are avoided as much as possible.

- Construction works will only take place during daylight hours as opposed to the night-time, when amphibians and some mammals are most active
- No pallets, skips or otherwise are to be placed upon areas of dense vegetation and should instead only be placed on flat, cleared ground such as gravel or tarmac to avoid animals getting underneath.
- The impact of works on adjacent habitats will be avoided by the clear demarcation of the works area.
- Contingency/emergency plans should be drawn up to address chemical spillage, drainage, collision, etc.
- Plastic netting, wire coils or similar hazardous features should not be left on the ground, to avoid entanglement. Aggregates/ construction materials should be stored on pallets as opposed to the storing on the ground.
- Machinery and materials will remain on bare ground and reasonable efforts will be made to avoid creating piles, or accumulated aggregates, particularly near to tussocky vegetation or adjacent wetland or woodland, which can attract animals. Materials that require piling will be stored within areas of bare ground above ground level, using pallets to prevent wildlife from seeking shelter below.
- Any excavated materials or soils stored overnight will be searched by contractors for wildlife prior to being used as infill.
- Where excavations/trenches are created - it should be ensured that they are not left open overnight to avoid amphibians falling into them and becoming trapped. If trenches cannot be filled in after the working day for whatever reason, an escape mechanism such as wooden planks of 5cm wide as a minimum should be placed in them at a 45 degree diagonal angle, to serve as an escape mechanism to small animals including mammals & amphibians.
- Excavations will be checked in the morning on a daily basis for the presence of any animals that may have fallen in during the night. Any animals that require handling will be handled with care using gloves and placed in like for like habitat off site.
- Prior to and during any vegetation clearance, existing vegetation on the site will be gradually cut and removed under ecological supervision to encourage any amphibians / terrestrial mammals present to move away from the affected areas;
- The working area, together with any storage areas, will be kept clear of debris, and any stored materials will be kept off the ground on pallets so as to prevent amphibians / reptiles from seeking shelter or protection within them
- Any open excavations (e.g. foundations / footings / service trenches etc) will be covered with plywood sheeting (or similar) at the end of each working day. The edges of these sheets will be covered with a thick layer of topsoil or similar to prevent amphibians / terrestrial mammals from seeking shelter beneath them. Any excavation must be infilled and made good to ground level with compacted stone or similar at the earliest opportunity, so as to remove any hazard to amphibians / terrestrial mammals.

- Any frogs or toads found should be carefully caught, placed (where capture is possible and humane) in a ventilated box using dampened gloved hands and released into suitable nearby vegetation that will be unaffected by the proposed works. Toads should not be touched using non-gloved hands as they secrete a toxin through their skin and they should not be handled for longer than is necessary.
- No newts of any kind should be handled or moved except by a suitably experienced and licenced ecologist who is qualified to distinguish between Great Crested Newt and other species of newts present in Britain.
- If in the event a GCN is found work must cease; the Ecologist will be made aware of the finding and will appraise the situation providing further advice. Site staff must be made aware that if GCN are found there is a correct procedure in place to follow, and failure to halt works may result in committing an offence. At no point should any person handle a GCN or suspected GCN. Unlicensed handling is illegal and untrained handling may cause the newt unnecessary stress and injury.
- All site operatives will maintain a watching brief throughout the work schedule and report any issues, anomalies or discrepancies to the ecologist or wildlife champion as appointed.

General rules to be applied

4.10 The site will be subjected to the following environmental rules:

1. During the works a watching brief will be in place to ensure environmental controls are in place to control dust migration
2. All reasonable measures will be taken to prevent dirt being deposited on the site access road including good housekeeping on site and effective traffic management
3. Any re-fuelling required will be a designated area away from drains/water courses with a spill kit available
4. Any static plant will be supplied with a drip tray to prevent environmental contamination

Noise / vibration

- 4.11 Due to the nature of the works, which involves the creation of hardstanding and solar panels, it is likely activities on site will have a noisy nature and may cause vibration.
- 4.12 At all times contractors will adhere to the recommendations in BS 5228-2: Noise and Vibration Control on Construction and Open Sites. Part 1 – Noise and Part 2 – Vibration (as amended, BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014).
- 4.13 Contractors will address daily duties and adapt their methods of work to reduce the inconvenience and nuisance to any nearby wildlife.
- 4.14 Contractors will undertake an assessment of equipment and put appropriate control measures in place as covered below.
- 4.15 The following control measures should be applied as appropriate to prevent unnecessary environmental disturbance, if and where applicable:
- On site noise levels will be monitored regularly, particularly when changes in process are required for any reason
 - Any compressors brought on site will be silenced or sound reduced models fitted with acoustic enclosures

- All pneumatic tools will be fitted with silencers or mufflers
- Deliveries will be programmed to arrive during daytime hours only
- Care will be taken when unloading vehicles/excavators to minimise noise
- Delivery vehicles will be routed to minimise disturbance to local residents and businesses
- Delivery vehicles will be prohibited from leaving their engines running while waiting on site to avoid unnecessary noise and emissions
- All equipment will be properly maintained and operated according to manufacturers' recommendations in such a manner as to avoid causing excessive noise
- All plant will be sited so that the noise impact at nearby noise sensitive properties will be avoided/minimized
- Local hoarding, screens or barriers will be erected as necessary to shield from noisy activities
- Pneumatic drills and other noisy appliances will not be used at times which may cause a nuisance

Management of Dirt & Dust strategy

4.16 Any operations undertaken on site which may cause dust will have prior assessment and any possible dust suppression techniques will be undertaken. Measures will be put into place to prevent dust and debris from entering the Croxteth Brook and its associated LWS southwards. Close mesh debris netting will be attached along the fence line adjacent to the LWS and no and / or storage of materials shall occur within 10m of the brook.

- Sheeting of vehicles transporting materials to and from site
- Limiting the speed of site vehicles to 5 mph
- Provision of wheel washing facilities and/or road sweepers at access points when necessary
- Damping down of haul roads when necessary
- COSHH data sheets will be checked for those materials producing dust, any toxic material identified, assessment to be made as to, who, what and where work shall be completed
- Dust emissions will be minimized and/or contained to boundaries of the construction site, e.g. re-specifying work to eliminate or reduce dust hazards, use exhaust ventilated tools, dampening work before or during demolition work
- Wind-blown dust from large, disturbed areas will be reduced by dampening down the surface and where possible, restricting the extent of such areas
- Extra care will be taken when loading materials onto trucks
- Prohibition of eating and smoking to be enforced in dusty atmospheres, especially where toxins may be present
- Adequate means of monitoring / measuring toxic dust will be provided and workplace exposure limits (WEL's) will be checked
- Operatives will be briefed regarding the hazards of dust to their health
- Operatives will be briefed regarding PPE and toxic dust
- There will no on-site open fires nor bonfires

Waste management

- 4.17 In order to minimise the generation of waste and waste disposed to landfill, all spoil, demolition arising's and wastes will be managed in accordance with the waste hierarchy and relevant regulatory controls:
- Measures to reduce excessive quantities of material storage on site will include adopting a just in time approach to material deliveries
 - A comprehensive Site Waste Management Plan (SWMP) will be developed and updated as the works progress capturing any changes that may result in differing waste streams and quantities
 - Compliance with all aspects of the Duty of Care (Environmental Protection Act 1990) will be achieved during demolition to protect the interests and safety of others from the potential effects of handling, storing, transporting and disposing of materials and wastes arising from the works
 - Disposal of waste from site will be carried out by a licensed waste carrier
 - All non-hazardous waste leaving site will be accompanied by a waste transfer note
 - Any invasive non-native species (i.e. Himalayan balsam) should be removed from site by a suitably licensed contaminated waste operator.
 - Copies of waste transfer notes for non-hazardous wastes will be kept for a minimum of 2 years If waste is deposited, kept or treated on the site, a Waste Management License or an exemption will be obtained
 - Copies of documentation for the transport of hazardous waste will be kept

Pollution Prevention

- 4.18 All work will strictly be in accordance with all of the good practice guidance, '*Guidance for Pollution Prevention (GPP)*' documents published by NetRegs⁴ which may include, but is not limited to, GPP1 (good environmental practices), GPP5 (works and maintenance in or near water) and PPG6 (working on construction & demolition sites). Further regulatory guidance relevant to developments within England are provided by gov.uk under '*Pollution prevention for business*'⁵.
- 4.19 Suitable pollution prevention measures (spill pads) should be put in place under attachments, parked plant or static equipment whenever there is a risk of fluid leaks or spillages, especially during refuelling operations.
- 4.20 Spill kits must be appropriate to the risk and amount of fuel and oils on site and located to be readily available should there be a spillage.
- 4.21 Suitable PPE (goggles and impermeable gauntlet gloves) must be included in the spill kits.
- 4.22 Suitable provision must be provided on site for storage of hazardous waste (following a spill) prior to its removal from site by a licensed waste carrier.
- 4.23 Maintenance of site plant will be done in a way to minimise the environmental risk with appropriate control measures in place.
- 4.24 All hydraulic oils supplied in plant under this Code of Practice must be defined as 'Readily Biodegradable' and meet OECD 301B.

⁴ See: <https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/>

⁵ See: <https://www.gov.uk/guidance/pollution-prevention-for-businesses>

Drainage

- 4.25 Given the proximity of the site to a priority deciduous woodland to the west, Croxteth Brook and LWS to the south, the contract team should be made aware that contaminated water can arise from a number of sources including:
- De-watering of excavations;
 - Run-off from exposed ground and material stockpiles;
 - Run-off from roads and haul routes and river crossings;
 - Plant washings;
 - Fuel and chemical storage/refuelling areas; and
 - Leaking/vandalised equipment.
- 4.26 The risk of water becoming polluted in the first place will be minimised. All sources of pollution will be identified at the pre-commencement stage prior to works via suitable documentation and the following mitigation measures will be put in place:
- **DIVERT** – clean surface water away from exposed soils. This can significantly reduce the volume of water contaminated with sediment on site thus reducing the risk of pollution and the costs associated with treating contaminated water before discharge,
 - **MINIMISE** – erosion of exposed soils,
 - **PREVENT** – contaminated water from entering watercourses untreated.
- 4.27 Selection of control measures will depend on how effective they will be on a site-by-site basis. Effectiveness of control measures will depend on weather patterns, site characteristics and construction activities. It is important that the selected control measures are inspected regularly by the Site Manager, particularly after rainfall to assess:
- Effectiveness,
 - Maintenance or replacement with alternative measures,
 - Diversion drains; such diversion can be implemented on the upstream perimeter of the site or immediately upstream of areas of exposed soil on the site (e.g. excavations, embankments and stockpiles). Line drains with a non-erodible material such as turf/geotextiles,
 - Bunds; these can be placed around exposed soils such as excavations/material stockpiles. This will prevent clean water entering the area and dirty water from leaving the area. Bunds should be made of non-erodible material such as straw bales/geotextiles.

5.0 Pre-commencement Checks for Protected Species

Breeding Birds

- 5.1 The existing vegetation provides suitable nesting platforms that could be used by a variety of common birds associated with rural environments. To avoid disturbing nesting birds, it is recommended that any clearance works of dense vegetation should be undertaken outside of the bird breeding season of March – August unless it can be demonstrated by a suitable qualified, professional ecologist that breeding birds are absent beforehand. Areas where this recommendation are most applicable are illustrated by the Amber and Red shaded areas on **Figure 3.1** in **Section 3.0** of this eCEMP.
- 5.2 Point 3.24 of the British Standards Publication 42020:2013 defines a professional ecologist as *“a person who has, through relevant education, training or experience, gained recognised qualifications and expertise in the field of ecology and environmental management.”*
- NB:** *All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected from destruction, damage and disturbance under the Wildlife & Countryside Act 1981 (as amended). It is a punishable offence to interfere in any way with an active nest.*
- 5.3 Where/if active nests are located by the Ecologist, then any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally, this can be aided, for example, via implementation of appropriate buffer zone(s) around the nest site (typically 5 – 10 metres) in which no disturbance is permitted until the nest is no longer in use. This would have to be coordinated through the expert judgement of the professional ecologist and species pending.
- 5.4 The applicant should also be aware that the breeding season can extend into September, or continue throughout the year for some species, and any breeding occurring outside of the stated period is still afforded the same protection as that within the period.

6.0 Contact details

- 6.1 A hard copy of this eCEMP must be kept on-site, in an easily accessible place at all times for the Site Manager, contractors and landowner to observe at hand.

Contact details for appropriate qualified ecologist where necessary

- Kylee Wilding (Director) – Kylee@tyrer-ecologicalconsultants.co.uk

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