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Pollution Management Plan

30 Lagoon Road, Pagham, West Sussex

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1 INTRODUCTION

1.1 Background and Purpose of the Report

The Ecology Co-op has been commissioned to undertake a pollution management plan for the proposed development at 30 Lagoon Road, Pagham by Mr Tom Bury. It is proposed that the existing single-story bungalow is to be demolished and replaced with a more modern residential property.

A Preliminary Ecological Appraisal (PEA) was undertaken for the site during March 2017, to establish if the proposed development would be subjected to any protected species or habitat constraints. The PEA established that it was necessary for certain mitigation to protect nesting birds, reptiles and foraging bats. In addition, to this the garden borders the eastern edge of the Pagham Harbour SSSI, SPA and Ramsar site, with the edges of a lagoon and reedbed forming the boundary of the sites garden (see Ecology Co-op Preliminary Ecological Appraisal report for full description).

This report documents simple steps, to be undertaken during the course of the proposed demolition and construction of the new property at 30 Lagoon Road, whereby the pollution risk to the neighbouring protected area can be controlled.



2 POLLUTION RISK ASSESMENT AND MITIGATION

Pollution risk	Mitigation	Methodology
<i>Preserving air quality</i>		
Risk of dust pollution from wind born building material.	Areas designated for stockpiling of materials susceptible to generating wind borne dust will be positioned away from the western boundary of the site (away from protected area boundary), stored in their original packaging within an area enclosed by hoardings. These hoardings must be solid in their construction.	Material will remain within their existing packaging wherever possible prior to use. For example cement kept within sealed bags till use, within an enclosure using solid hoardings constructed of a ply board wall.
	Identify work activities that have a high potential for dust emissions, enclose fully and maintain the enclosure for the duration that the specific work activity is in operation. Watering down of dust must be undertaken during dry periods.	
Risk of dust pollution from demolition activities.	Demolition must not be undertaken if there is a risk that airborne particulates and dust will be blown into the protected area.	Demolition works should be confined to still days and ensure an adequate supply of water and means of deployment is available on site for dust suppression measures.
		Sheet or otherwise enclose loaded bins and skips.
Emissions from plant, equipment and on-site vehicles.	Engines of vehicles and equipment shall not be left running unnecessarily.	
	Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	
	Use cutting, grinding or sawing equipment fitted, or in conjunction with, suitable dust suppression techniques such as water sprays or local extraction.	
Emissions and particulates from burning materials.	The burning of material and/or waste on-site shall be strictly prohibited.	Transport all waste materials off site for reuse, recycling or responsible disposal.
<i>Removing risk of land/water contamination.</i>		



Risk of pollution spills from fuels and refueling.	All generators and static diesel-powered plant used on-site will either be fully bunded to contain spills from operation and refueling or placed on drip trays to prevent contamination of the ground. No refueling will be undertaken with 10m of the boundary of the protected area.	
	Spill kits should be stored onsite and spill kits should accompany all mobile plant. At least one person on site should be trained in their use.	
Risk from activities spilling out from within the site boundaries to neighboring sensitive protected site.	All construction work activities will be undertaken within the designated site boundaries, including the areas designed to accommodate materials.	Physical barriers such as hoardings should be erected along the western boundary of the site, between the construction zone and the protected area to prevent migration of activities, material and/or pollution to the neighboring protected area. Care must be taken when erecting hoardings that trees or vegetation remain undamaged.
	Wash out of concrete wagons or concrete handling equipment will be carefully managed.	A Siltbuster system will be installed and in operation if it is necessary to wash out vehicles/plant on site.
		All site personnel will receive training to include specific information on land and water contamination and the importance of protecting the neighboring protected area through an on-site 'tool box talk' by the site manager.
	Reporting of any pollution incidents potentially effecting the protected area.	Any pollution incident effecting the water body to the west of the site within the protected area should be reported to the Environment Agency and Natural England immediately, allowing for a rapid and effective response.
Risk of high sediment load within surface water runoff from heavy rain.	If periods of heavy rain are expected during the construction phase, the pollution risk from sediment loaded surface water run off can be managed through the positioning of straw bails within natural channels within the ground where water is running from	The straw bails will entrap much of the sediment from the surface water as it flows under/through the bails positioned within the natural channels of the ground.



	the site towards the edge of the protected area upon the western boundary of the site.	
	Pollution from sediment runoff can be reduced through not storing large amounts of excavated materials within the site.	Excavated materials should be removed off site at the point or soon after excavation.
Creation of a works buffer zone between the construction zone and the western boundary of the site.	Creation of a 10m buffer zone where all construction related activity are not allowed will reduce the risk of any potential pollution incidents to the protected area to the west of the site.	
<i>Reducing noise pollution</i>		
Excessive noise can be very damaging to wildlife. Therefore noise, where practicable, should be kept to a minimum during the course of works.	Working hours for demolition/construction works should be adhered to as is normally stipulated with any such planning permission.	The hoardings to the west of the site will help to reduce noise spill over into the neighboring protected area.
		Only equipment that is well maintained shall be used on site and equipment shall be switched off when not in use.
<i>Reducing light pollution</i>		
Excessive artificial light at night can be very damaging to wildlife. Therefore, artificial lighting, where practicable, should be kept to a minimum during the course of works.	Any security lighting to protect the site/plant should be low level, on motion sensors and timers and be directed away from the boundary of the protected area.	

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.



APPENDIX 1 – Wildlife Legislation and National Planning Policy

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to bats.

All bat species in the UK are included in Schedule II of the Habitats Regulations 2010, which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("The EC Habitats Directive"). As such all bat species in the UK are defined as 'European Protected Species (EPS).

Four species of bat (Bechstein's bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus*, greater and lesser horseshoe bats, *Rhinolophus ferrumequinum* and *R. hipposideros*) are also listed on Annex IV of the EC Habitats Directive. This requires the designation of a series of sites which contain important populations of these species as Special Areas of Conservation (SACs).

All species of British bat are also fully protected under the Wildlife and Countryside Act (1981), as amended, through inclusion in Schedule V.

All species of bat are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Section 41 of the NERC Act lists the habitats and species of principle importance. This places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of habitats and species of principal importance for the conservation of biodiversity in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers.

Under the above legislation it is an offence to:

- Kill, injure or take any individual bat of any species;
- possess any part of an individual bat, either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by bats for shelter, rest, protection, or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberately disturb bats in such a way as to be likely to impair their ability to:
 - survive, to breed or reproduce, to rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

It is also an offence to set and use articles capable of catching, injuring, or killing bats (for example a trap or poison), or knowingly cause or permit such an action. There is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of bats.



A European Protected Species License (EPSL) in relation to bats is required from Natural England for any work that would result in an otherwise unlawful activity (e.g. damage to a bat roost). A license can only be issued to permit otherwise prohibited acts if Natural England are satisfied that all the following three tests are met:

- The proposal is for ‘preserving public health or public safety, or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’;
- There is no satisfactory alternative; and
- The action authorised by the license will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range.

A bat roost is defined by the Bat Conservation Trust’s Bat Surveys—Good Practice Guidelines 2nd Edition as “the resting place of a bat”. In general, the word roost is interpreted as “any structure or place, which any wild bat uses for shelter or protection.”

Bats tend to re-use the same roosts; therefore, legal opinion is guided by recent case law precedents, that a roost is protected, whether or not the bats are present at the time. This includes summer roosts used for breeding; or winter roosts, used for hibernating.



APPENDIX 2 Reducing impacts of artificial light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust¹ should be considered while designing the lighting scheme. This includes the following measures:

Do not:

- provide excessive lighting. Use only the minimum amount of light needed for the task.
- directly illuminate bat roosts or important areas for nesting birds

Avoid:

- installing lighting in ecologically sensitive areas such as: near ponds, lakes, rivers, areas of high conservation value; sites supporting particularly light-sensitive species of conservation significance (e.g. glow worms, rare moths, slow-flying bats) and habitat used by protected species.
- using reflective surfaces under lights.

Do:

- consider employing a competent lighting designer who will apply the principals of providing the right light, in the right place, at the right time and controlled by the right system.
- minimise the spread of light to at, or near horizontal and 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.
- consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures.
- consider no lighting solutions where possible such as white lining, good signage, and LED cat's eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- use temporary close-boarded fencing until vegetation matures, to shield sensitive areas from lighting.
- limit the times that lights are on to provide some dark periods. The task being lit often varies, for example roads are less used after 23.00hrs and car parks are empty. A lighting designer can vary the lighting levels as the use of the area changes reducing lighting levels or perhaps even switching installations off after certain times. This use of adaptive lighting can tailor the installation to suit human health and safety as well as wildlife needs.

¹ Bat Conservation Trust (2014) Artificial Lighting and Wildlife - Interim Guidance: Recommendations to help minimise the impact artificial lighting. Available at: http://www.bats.org.uk/pages/bats_and_lighting.html



Further reading:

Buglife (2011) *A review of the impact of artificial light on invertebrates*.

Royal Commission on Environmental Pollution (2009) *Artificial light in the environment*. HMSO, London.
Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) *Ecological Consequences of Artificial Night Lighting*. Island Press.
ISBN 9781559631297.

CPRE (2014) *Shedding Light: A survey of local authority approaches to lighting in England*. Available
at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at:
<https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2011) *Guidance Notes for the Reduction of Obtrusive Light*
GN01:2011. Available at: <https://www.theilp.org.uk/resources/free-resources/>