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INTRODUCTION

Background



5.1 This Chapter provides an Ecological Impact Assessment (EcIA) on the likely significant impacts on biodiversity of the proposed increase in the permitted soil and stone intake capacity and extended operational life of the existing soil recovery facility operated by Kilsaran Concrete Unlimited Company ('Kilsaran') at Halverstown, Kilcullen, Co. Kildere.

Location and Setting

- 5.2 The existing backfilling / recovery facility is located in the townland of Halverstown Co. Kildare, approximately 4.5km south of Kilcullen village, just over 2km to the north-east of Calverstown village and approximately 700m west of the M9 motorway. The site location is shown in Figure 5.1.
- 5.3 The application site extends across an area of approximately 18.0 hectares (ha), within a wider landholding of 26.3 hectares. It is bound to the north by L6083 local road, by the R448 Regional Road (the former N9 National Primary Road) to the east and by farmland with residential housing and agricultural buildings to the south and west. The application site is accessed via an existing junction and entrance leading off the R448 Regional Road.
- 5.4 The existing backfilling / recovery facility at the application site comprises lands originally developed as a sand and gravel pit (to the south of the access road through the site) and lands previously only ever used for agricultural use, principally grassland (in the north-eastern part of the application site). There is an existing concrete block plant (operated by the Applicant) located to the north-west of the application site and accessed by the road running through it.
- 5.5 The surrounding landscape is characterised by agricultural land with fields under a mixture of arable production and permanent pasture some of which are bounded by hedgerows. The M9 motorway running in a north-south direction dissects the landscape to the east of the former sand and gravel pit and forms a prominent landscape feature. The town of Kilcullen and the village of Calverstown are the largest urban areas with other small rural settlements and properties scattered along the roads and lanes throughout the local landscape.

Purpose of the Ecological Impact Assessment

- 5.6 The EcIA presented in this section of the Environmental Impact Assessment Report (EIAR) can be considered as having three main purposes:
 - to provide an objective and transparent assessment of the ecological effects of the development proposal;
 - to permit objective and transparent determination of the consequences of the proposal in terms of national, regional and local policies relevant to nature conservation; and
 - to demonstrate that the proposal will meet the legal requirements relating to habitats and species.
- 5.7 This EcIA has been undertaken with reference to guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹ '*the CIEEM EcIA Guidelines*', and with respect to the Environmental Protection Agency's (EPA) guidelines for carrying out Environmental Impact Assessment Reports² and follows a standard





¹ CIEEM (2016). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal* 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

² Environmental Protection Agency (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.* Dated May 2022. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford.

approach based upon: the description of the existing baseline conditions within the application site; the determination of important ecological features; the identification of all potentially significant ecological effects from the proposed continuation of backfilling and soil recovery activities at Halverstown. The assessment also considers the likelihood of any cumulative effects, i.e. those resulting from the proposed development and other plans or projects.

- 5.8 Where a negative impact has been identified, suitable mitigation measures to prevent or reduce the impact, or where mitigation is not possible, enhancement and compensation measures are detailed to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects. Where appropriate, this report also identifies how mitigation, enhancement and compensation measures will / could be delivered along with the requirements for post-construction monitoring, maintenance or management.
- 5.9 Any residual effects, following the implementation of mitigation and enhancement measures, are then identified and assessed with significant effects clearly described.

LEGISLATION AND PLANNING POLICY

Legislation

- 5.10 The following legislation are relevant to this EIAR Chapter:
 - The EIA Directive (2014/52/EU);
 - The Habitats Directive (92/43/EEC);
 - The Birds Directive (2009/147/EC);
 - European Communities (Birds and Natural Habitats) Regulations, 2011 2015.
 - The Wildlife Acts 1976 as amended;
 - Wildlife (Amendment) Act, 2000, 2010, 2012;
 - The Flora (Protection) Order 2015.
 - The Planning and Development Acts 2000 to 2020 PART XAB.
 - Summary details in respect of this legislation are provided in Appendix 5-A of this report.

Relevant Planning Policy

5.11 The relevant local planning policies have been extracted from the Kildare County Development Plan (CDP) 2023-2029 and are presented in Appendix 5-A of this Chapter. These policies are specific to Chapter 6 (Infrastructure and Environmental Services) and Chapter 12 (Biodiversity and Green Infrastructure) and are concerned with the policies and objectives relating to biodiversity and designated sites.

Biodiversity Planning

5.12 Ireland's National Biodiversity Plan 2017–2021³ identifies actions towards understanding and protecting biodiversity in Ireland with the vision "that biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally".





³ Department of Culture, Heritage and the Gaeltacht (2017). National Biodiversity Plan 2017-2021. Department of Culture, Heritage and the Gaeltacht, Dublin.

5.13 Local Biodiversity Action Plans have been produced by some Local Authorities. In Kildare, the County Kildare Biodiversity Plan 2009-2014 identifies a programme of actions to protect and enhance biodiversity at local level.

METHODOLOGY

Study Area

- NED POOR
- 5.14 The study area adopted for the purposes of this assessment includes all the land within the red line application boundary which provided for continued backfilling and recovery of the former pit at Halverstown, together with important ecological features within the zone of influence of the site with the potential to be directly and indirectly affected by the proposed further development.
- 5.15 The 2023 field survey undertaken for the purposes of this assessment included all accessible areas within the application boundary (i.e., the red line boundary).

Baseline Study Methodology

- 5.16 Baseline ecological data was collated through a combination of desk-based study and field survey consistent with current standard methodologies and published good guidelines. The scope of the ecological field surveys was defined on the basis of known and the potential ecological interest within the application site and best practice⁴.
- 5.17 Table 5-1 below provides a summary of the ecological scope of works and the methods used to establish the ecological baseline conditions within the study area.
- 5.18 Over and above the scope of works in Table 5-1, it was deemed that no other specialist surveys were necessary in respect of the habitats present at the application site and their potential to support protected species.

Study	Scope of Work	Study Area	Methodology
Desk- based study	Statutory and non- statutory designated sites	All sites within a 5km radius of the application site	Web-search including the National Parks and Wildlife Service (NPWS) interactive mapping facility ⁵ .
	Protected, rare and notable species	2km grid squares encompassing the application site (tetrad N80H)	Web-search including information held by the NPWS ⁶ and the National Biodiversity Data Centre (NBDC) ⁷ .

Table 5-1 Summary of Ecological Scope of Works and Methods Used

Site Survey

5.19 A habitat and walkover survey of the Site was undertaken by SLR Project Ecologist Jake Matthews (MSc, BSc) on 8th September 2023. The objective of the walkover survey was to record and classify the habitat-types and appraise the likely presence / absence of protected species.





⁴ Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall (E & F N Spon), London.

⁵ NPWS. <u>https://www.npws.ie/maps-and-data/designated-site-data</u> Last accessed September 2023).

⁶ National Parks and Wildlife Service. Available from <u>www.npws.ie</u> (Last accessed September 2023).

- 5.20 A standard approach to the classification and mapping of habitats in accordance with Fossitt (2000)⁸ to Level 3 and target notes where applicable to describe any feature of particular ecological interest.
- 5.21 The habitat survey method was extended to include an assessment of habitats for evidence of, or their potential to support protected, rare or notable species (including mammals, birds, reptiles, amphibians and invertebrates) and any other important, ecological feature that may require mitigation or an ecologically sensitive design in respect of the proposed development.
- 5.22 The weather conditions during the survey were:
 - Temperature: 19°C
 - Wind speed 2 (Beaufort)
 - Cloud cover: 0/8 oktas
 - Precipitation: None
- 5.23 The habitat map prepared on foot of the survey is presented in Figure 5-2.

Uncertainty of Data and Limitations

- 5.24 The optimal period to undertake habitat surveys is considered April to September. The survey was completed in September. This is considered to be within the optimal window to detect many types of flora. Therefore, no significant constraint is anticipated to the abundance and variation of flora noted.
- 5.25 Areas of scrub vegetation around the application site boundaries (which are unaffected by future development) were too dense to fully access and survey. It is possible that trees existed in these areas with bat roosting potential that were not identified. It is also possible that potential badger setts were located in these areas that were not identified during the surveys

Assessment Methodology

Defining Important Ecological Features

- 5.26 In accordance with the CIEEM guidelines only ecological features (habitats, species, ecosystems and their functions / processes), which are considered to be important and potentially affected by the project should be subject to detailed assessment. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable.
- 5.27 CIEEM suggests that to ensure a consistency of approach, ecological features (designated sites, habitats and species) are valued in accordance with the geographical frame of reference. For the purpose of this assessment the geographical frame of reference developed by Transport Infrastructure Ireland⁹ has been used, as detailed below:
 - International;
 - National;
 - County;
 - Local (higher); and
 - Local (lower).



⁸ Fossitt, J. A. (2000). A Guide to Habitats in Ireland. Reprint 2007. The Heritage Council, Kilkenny, Ireland.

⁹ NRA (2009). *Guidelines for Assessment of Ecological Impacts of National Road Schemes*. Revision 2. National Roads Authority, Dublin.

5.28 The above categories are then applied to the features identified in baseline surveys and desk-based studies. Some features can already be recognised as having ecological value and, as such, they may be designated as statutory or non-statutory designated nature conservation sites. Other features may require an evaluation based upon their previously un-assessed biodiversity value. A summary of the criteria used in evaluating designated 5-18-101-101× sites, habitats and species is provided in Table 5-2.

Table 5-2 **Criteria for Defining Important Ecological Features**

Evaluation	Criteria
International	An internationally designated site or proposed site including SAC, Site of Community Importance (SCI) and SPA and Ramsar site, or an area which has been determined meets the published selection criteria for such designations, irrespective of whether or not it has yet been notified.
	World Heritage Sites, where the ecological feature assessed is an intrinsic part of the natural heritage value that led to the designation.
	An intrinsic part of the core area of a designated Biosphere Reserve.
	Undesignated sites containing 'best examples' of Annex I habitats under the EU Habitats Directive.
	Major designated salmonid waters.
	A resident or regularly occurring population of an internationally important bird species listed in Annex I and/or referred to in Article 4(2) of the Birds Directive and/or a species of animal or plant listed in Annex II and/or IV of the Habitats Directive and which is threatened or rare in Ireland or of uncertain conservation status or of global conservation in the NBP.
	A resident or regularly occurring nationally significant population or of any internationally important species representing greater than 1% of its international population.
National	A nationally designated site or proposed as a NHA or statutory Nature Reserve or Refuge for Fauna and Flora, or an area fulfilling the criteria for designations, irrespective of whether or not it has yet been notified.
	Undesignated sites containing good examples and viable areas of Annex I habitats under the EU Habitats Directive.
	A resident or regularly occurring population (>1% of the national population) of a nationally important species which is protected under the Wildlife Acts and or listed on a relevant Red Data list.
County	Areas identified as Areas of Special Amenity, subject to a Tree Preservation Order or Area of High Amenity where designated on the basis of their ecological value.
	Site containing area or areas of habitat types listed in Annex I of the EU Habitats Directive that do not fulfil the criteria for valuation of International or National importance.
	A resident or regularly occurring locally significant population (>1% of the county population) assessed of importance of a county important species and/or a species protected under the Wildlife Acts or listed in Annex I of the EU Birds Directive, Annex II and/or IV of the EU Habitats Directive or on a relevant Red Data list assessed to be important at County level.
	County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified within the NBP and/or Local Biodiversity Action Plan.



Evaluation	Criteria Poo
	Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.
	Sites containing habitats and species that are rare or are undergoing a decine in quality or extent at a national level.
Local (Higher)	Locally important populations of priority species or habitats or natural heritage features identified in any Local Biodiversity Action Plan.
	A resident or regularly occurring locally significant population (>1% of the local population) and/or a species protected under the Wildlife Acts or listed in Annex I of the EU Birds Directive, Annex II and/or IV of the EU Habitats Directive or on a relevant Red Data list assessed to be important at the Local level.
	Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality.
	Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
Local (Lower)	Sites containing small areas of semi-natural habitat that are of some local importance for wildlife.

Assessment of Impacts

- 5.29 The assessment of potential ecological impacts has been carried out using the guidelines published by the CIEEM and EPA and can be summarised as:
 - the identification of the range of potential impacts that may arise from the proposed development;
 - the consideration of the systems and processes in place to avoid, reduce and mitigate the possible effects of these impacts;
 - the identification of opportunities for ecological enhancement within the development;
 - an assessment of the residual impacts, following consideration for the implementation of avoidance, mitigation and enhancement measures; and
 - where necessary the identification of compensation required to offset any residual effects.
- 5.30 Table 5-3 below provides a summary of the criteria used to evaluate the residual impacts and assess the significance of any such impact.

Evaluation	Criteria
Direction of impact	Positive (a change that improves the quality of the environment) or Negative (a change which reduces the quality of the environment)
Probability of occurring	Broadly defined on 4 levels: Certain (95% chance or higher), Probable (above 50% but below 95%), Unlikely (above 5% but less than 50%) and extremely unlikely (less than 5%)
Extent	Spatial or geographical area over which an impact may occur.

Table 5-3Key Considerations when Characterising Impacts



Evaluation	Criteria
Magnitude	Size, amount, intensity and volume of any impact on any particular feature including any severity of effect, based on EPA's guidance, as imperceptible, slight, moderate, significant and profound
Duration	Effects may be described, based on EPA's measures, as short (1 to 7 year) medium (7 to 15 years) or long-term (15 to 60 years) and permanent or temperary in ecological terms (e.g., within the lifetime of the species affected)
Frequency and timing	The number of times an activity will occur and timing of an activity
Reversibility	Whether or not the effect can be reversed from spontaneous recovery, or which may be counteracted by mitigation within a reasonable timescale

- 5.31 Impacts are defined as being negative or positive. The term significant is independent of the value of the receptor. A significant impact is defined as an impact on the integrity of a defined ecosystem and/or an action that undermines the conservation objectives (either specific or broad) of an important ecological feature. An action that would affect the conservation status of the population of a species of conservation concern is likely to be significant at the geographic scale where the effect was predicted to be observed.
- 5.32 Where a potential negative impact has been identified, mitigation, enhancement and/or compensatory measures have been formulated using best practice techniques and guidance to prevent, reduce or offset a significant effect. The degree of confidence in the likely success of mitigation or compensation, based upon published studies and the experience of the assessor, is also made and any uncertainties are clearly expressed.
- 5.33 The final part of the assessment is to determine the significance of the residual impacts of the proposed scheme from an ecological perspective and also describe the implications of the proposed development from a legal and policy perspective.

Avoidance, Mitigation, Compensation and Enhancement

- 5.34 A sequential process has been adopted to avoid, mitigate and compensate for ecological impacts. This is often referred to as the 'mitigation hierarchy'.
- 5.35 It is necessary for the EIAR to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:
 - Avoidance is used where an impact has been avoided e.g. through changes in scheme design;
 - Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
 - Compensation describes measures taken to offset residual effects, i.e. where mitigation in situ is not possible; and
 - Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

Assessment of Cumulative Impacts

- 5.36 Cumulative impacts can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a particular location. This EcIA assesses the potential cumulative impacts from the continuation of backfilling and recovery activities at the existing facility with other projects which could include:
 - proposals for which consent has been applied but which are awaiting determination;
 - projects which have been granted consent but which have not yet been started or which have been started but are not yet completed (i.e. under construction);



- proposals which have been refused permission but which are subject to appeal and the appeal is undetermined;
- constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
- developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan.

ECOLOGICAL BASELINE CONDITIONS

5.37 This section provides an overview of the existing ecological baseline conditions at the application site and within its wider surrounding environment.

General Site Description

- 5.38 The application site comprises predominantly of a worked out sand and gravel pit which was previously used for aggregate extraction and storage as for deposition of fines in settlement lagoons.
- 5.39 The bulk of the former sand and gravel pit and the former agricultural lands to the northeast are subject to high levels of disturbance (associated with ongoing site activities) and are largely devoid of vegetation. There is an existing access road and buildings within the application site which service both the existing recovery facility and the concrete block manufacturing plant to the north-west of the application site.

Designated Sites

- 5.40 The application site is not subject to any statutory or non-statutory nature conservation designations (SAC, SPA, NHA, Nature Reserve or pNHA).
- 5.41 Within a 5km radius of the application site there are two designated sites. Figure 5-1 shows the location of these designated sites in relation to the application site and a summary of these sites presented in Table 5-4.

Designated Site	Reason form Importance / Designation	Location Relative to Application Site	Level of Value
Dunlavin Marshes pNHA [Site Code 001772]	Dunlavin Marshes consists of two disjointed strips of fen which lie within an area of alkaline moraines that support a range of wetland plant species.	2.4km south southeast at closest point	National
Curragh (Kildare) pNHA [Site Code 000392]	The Curragh is an extensive open plain that extends for some 10km and is approximately 5km at its widest that is dominated by lowland acid grassland. The largely unimproved grassland shows variation due to changes in soils and grazing regimes. Other habitats include small areas of wet and dry heath. The site supports nationally important populations of rare fungi but is also of ornithological importance.	3.4km north northwest at closest point	National

Table 5-4 Designated Sites



Habitats

The habitat types recorded within the application site based on the classification as 5.42 NED. POOP defined by Fossitt (2000) are presented in Table 5-5 below.

Table 5-5	
Habitat-types Recorded in the Application Site	

Level 1 Habitat Hierarchy	Level 2 Habitat Hierarchy	Level 3 Habitat Hierarchy	Area/ Length
E - Exposed rock and disturbed ground	ED - Disturbed ground	ED2 - Spoil and bare ground & ED3 – Recolonising bare ground	14.05 ha
W – Woodland and scrub	WS – Scrub / transitional woodland	WS1 – Scrub	6.17 ha
	WL – Linear woodland / scrub	WL2 - Treelines	990.5m
G – Grassland and marsh	GS – Semi-natural grassland	GS2 – Dry meadows and grassy verges	0.73 ha
		G42 – Wet grassland	0.12 ha
B - Cultivated and built land	BL – Built land	BL3 – Buildings and artificial surfaces	0.67 ha
F – Freshwater	FL – Lakes and ponds	FL4 – Drainage ditch	57.41m

- 5.43 Figure 5-2 shows the extent of the habitats recorded at the application site in the updated ecology survey undertaken in September 2023. Important habitats and other features identified adjacent to the application site have also been included.
- 5.44 A summary description and ecological evaluation of each of the habitats and any other key features is provided in Table 5-6.



Habitat Feature	Description	Location	Level of Value	Rationale
GS1 – Dry calcareous and neutral grassland	 GS1 – Dry calcareous and neutral grassland was located on a raised area (see Photograph 5-1 in Appendix 5-B). This grassland was located to the north-west of the ownership boundary; outside the application site. This area was unmanaged and comprised longer swards of mostly tussocky grasses. It is anticipated that the grassland is grazed by rabbits and deer. Species included cocksfoot <i>Dactylis glomerata</i>, Yorkshire fog <i>Holcus lanatus</i>, fescue <i>Festuca rubra</i>, horsetail <i>Equisetum arvense</i>, dandelion <i>Taraxacum officinale</i> agg., woundwort <i>Stachys palustris</i>. It is possible that orchids may have been present earlier in the year. However, it was seasonally too late to accurately identify orchids at the time of the survey. Additionally, areas of gorse and willow scrub were present throughout the grassland. 	Ownership boundary	Local (higher)	A typically common and widespread habitat comprising rank grassland with some botanical interest but generally of low ecological and nature conservation value. This habitat was considered to have ecological connectivity through connective scrub along the ownership land's boundaries.
GS2 – Dry meadows and grassy verges	GS2 – Dry meadows and grassy verges were present as buffer habitats between ED2 / ED3 habitat and the north-east and eastern boundary scrub and treelines and along the access road (see Photographs 5-2 and 5-3 in Appendix 5-B). Species included birds-foot trefoil <i>Lotus corniculatus</i> , fescue, woundwort <i>Stachys palustris</i> , creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , broad-leaved dock <i>Rumex obtusifolius</i> , cocksfoot <i>Dactylis glomerata</i> , false oat grass <i>Arrhenatherum</i> <i>elatius</i> , ribwort plantain <i>Plantago lanceolata</i> , red clover <i>Trifolium pratense</i> , silver weed <i>Potentilla</i> <i>anserina</i> , horsetail, yarrow <i>Achillea millefolium</i> ,	Application site	Local (lower)	A typically common and widespread habitat comprising rank grassland with some botanical interest but generally of low ecological and nature conservation value. Due to the size, extent and fragmentation of this habitat it provides limited opportunities for wildlife.

 Table 5-6

 Description and Evaluation of Habitats and Other Features



Habitat Feature	Description	Location	Level of Value	Rationale
	 dandelion <i>Taraxacum officinalis</i> agg., hawksbeard <i>Crepis capillaris</i>, speedwell <i>Veronica</i> sp., bracken <i>Pteridium aquilinum</i>, poppy <i>Papaver rhoeas</i>, black meddick <i>Medicago lupulina</i>, curly. dock <i>Rumex</i> <i>crispus</i>, Yorkshire fog <i>Holcus lanatus</i>, creeping buttercup <i>Ranunculus repens</i>, and bedstraw <i>Galium</i> <i>aparine</i>. This habitat was unmanaged and comprised a long, tussocky sward. It is anticipated that it is likely grazed by rabbits. 			KD: 7803101×
GS4 – Wet grassland	GS4 – Wet grassland was found to the north-west of the ownership boundary; outside the application site. This was located on a raised area, surrounded by dense scrub. Older aerial images suggested that this area may have comprised an aquatic habitat in the past. However, this was no longer present, with wet grassland and colonising willow saplings now present (see Photograph 5-4 in Appendix 5-B). Species here included goat willow <i>Salix caprea</i> , mosses, fescue, soft rush <i>Juncus effusus</i> ,	Ownership boundary	Local (higher)	A typically common and widespread habitat with some botanical interest but generally of low ecological and nature conservation value. This area of wet grassland was also relatively small. Habitat providing some but rather limited opportunities for wildlife.
WS1 – Scrub	The largest extent of <i>WS1 – Scrub</i> habitat (see Photograph 5-5 in Appendix 5-B) lies in the south- east corner of the application site and extends along the western face of the former sand and gravel pit. The areas of scrub in the south-east corner of the site have developed in damper hollows created through the mineral extraction, across parts of the former silt lagoons (and extending up side slopes). The scrub is typically dominated by willows including goat willow <i>Salix caprea</i> , grey willow <i>Salix cinerea</i> agg. And white willow but which also includes sycamore <i>Acer pseudoplatanus</i> ; silver birch <i>Betula</i>	Application site and ownership boundary. This habitat also exists offsite, within the surrounding areas.	Local (higher)	A typically common and widespread habitat at various stages of development. Habitat providing opportunities for a range of species including birds and invertebrates but which is largely fragmented within context of the surrounding landscape.



Habitat Feature	Description	Location	Level of Value	Rationale
	pendula; butterfly-bush Buddleja davidii; ashFraxinus excelsior, dog-rose Rosa canina agg.; elderSambucus nigra; bramble; and gorse. The groundflora is typically sparse but can include blackknapweed; rosebay willowherb Chamerionangustifolium; cock's-foot Dactylis glomerata;common bird's-foot-trefoil; creeping cinquefoil; andgermander speedwell. Bryophytes are conspicuousincluding among others rough-stalked feather-mossBrachythecium rutabulum, pointed spear-moss andcommon feather-moss Kindbergia praelonga.The WS1 – Scrub along the western boundary of theapplication site has developed on the face of theformer sand and gravel pit that comprises of butterfly-bush, hazel Corylus avellana, hawthorn Crataegusmonogyna, beech Fagus sylvatica, ash, dog-rose,bramble, elder, grey willow and gorse. The groundflora is typically sparse under the dense canopy butin more open areas supports patches of GS2 – Drymeadows and grassy verges habitat that includes:yarrow; glaucous sedge; cock's-foot; hogweed,oxeye daisy; wild marjoram Origanum vulgare;ribwort plantain; selfheal; creeping buttercup, redclover and colt's-foot Tussilago farfara. Speciesmore typical of woodlands include: hairy bromeBromus ramosus; herb-Robert Geraniumrobertianum; ground-ivy Glechoma hederacea; andwood sage Teucrium scorodonia.			T Roward



Habitat Feature	Description	Location	Level of Value	Rationale
WL2 – Treelines	 WL2 – Treelines border the application site and the ownership boundary to the north-east, west, and south-west of the site (see Photograph 5-6 in Appendix 5-B). The WL2 – Treeline located at the north of the application Site is dominated by ash <i>Fraxinus excelsior</i> with hawthorn <i>Crataegus monogyna</i>, elder <i>Sambucus nigra</i> and bramble <i>Rubus fruticosus</i> agg. is also present and which appears to line a former lane. The ground flora is typically dominated by ivy <i>Hedera helix</i>. Other treelines are dominated by ash with some sycamore <i>Acer pseudoplatanus</i> and beech <i>Fagus sylvatica</i> also present with an understorey of hawthorn, elder and bramble. The ground flora is typically dominated by ivy. 	Application site and ownership boundary. This habitat also exists offsite, within the surrounding areas.	Local (higher)	A typical common and widespread habitat that provides opportunities for wildlife and which are considered to have high conservation value
ED2 - Spoil and bare ground	ED2 – Spoil and bare ground habitat is the predominant habitat throughout the application site (see Photographs 5-7 and 5-8) With the exception of some pioneer species in less disturbed areas is largely devoid of any vegetation. Species present included sweet vernal-grass Anthoxanthum odoratum, glaucous sedge Carex flacca, Yorkshire-fog Holcus lanatus and annual meadow-grass Poa annua; and the forbs of yarrow Achillea millefolium; scarlet pimpernel Anagallis arvensis, daisy Bellis perennis, common centaury Centaurium erythraea, creeping thistle Cirsium arvense, spear thistle Cirsium vulgare, broad-leaved willowherb Epilobium montanum, hoary willowherb Epilobium parviflorum, eyebright Euphrasia officinalis, perforate St John's-wort Hypericum perforatum, fairy flax Linum catharticum, bird's-foot-	Application site	Local (lower)	An anthropogenic habitat subject to varying degrees of disturbance with little ecological or botanical interest and low conservation value.

Habitat Feature	Description	Location	Level of Value	Rationale
	trefoil, weld <i>Reseda luteola</i> , common ragwort, smooth sow-thistle <i>Sonchus oleraceus</i> , scentless mayweed <i>Tripleurospermum inodorum</i> and colt's-foot along with some development of butterfly-bush.			KD. RO
ED3 - recolonising bare ground	ED3 – Recolonising bare ground habitat is found through the application site in areas historically disturbed but where recent disturbance has reduced allowing the development of vegetation (see Photographs 5-7 and 5-8 in Appendix 5-B). This includes an area sitting on top of a terraced area in the south-eastern corner of the application site and a former silt lagoon in the south-western corner. The terraced area supports species with a similar composition to the ED2 – Spoil and bare ground habitat but with the ground coverage of vegetation typically over 50%. The species present to the south-western corner of the application site also includes all the species found in areas of ED2 – Spoil and bare ground habitat but also includes hard rush; common mouse- ear, marsh thistle; and some water horsetail <i>Equisetum fluviatile</i> in localised patches as well as the bryophytes of rough-stalked feather-moss, pointed spear-moss, common feather-moss and springy turf-moss <i>Rhytidiadelphus squarrosus</i> . Much of this habitat was free from vegetation. In places early successional plant communities were establishing and included snap dragon <i>Antirrhinum majus</i> , hedge mustard <i>Sisymbrium officinale</i> , coltsfoot <i>Tussilago farfara</i> , gorse <i>Ulex europaeus</i> , fescue <i>Festuca rubra</i> , horsetail <i>Equisetum arvense</i> , and hawkbit <i>Leontodon</i> sp	Application site	Local (lower)	A habitat supporting vegetation communities in various stages of development and succession towards grassland communities but generally of low ecological and nature conservation value.



Habitat Feature	Description	Location	Level of Value	Rationale
	Recolonising bare ground was becoming established within spoil and bare ground habitat (TN1 & TN2).			
FL4 – Drainage ditch	One drainage ditch was located within the ownership boundary, to the west of the application site (see Photograph 5-9 in Appendix 5-B). This ditch was completely straight, was approximately 1m wide, and was heavily vegetated with flora including bullrush <i>Typha latifolia</i> , water cress <i>Nasturtium officinale</i> , soft rush <i>Juncus effusus</i> , centaury <i>Centaurium erythraea</i> , horsetail, birds foot trefoil, and cocksfoot. The ditch was holding some water at the time of the survey.	Ownership boundary	Local (higher)	The habitat is not hydrotogically connected to other aquatic habitats offsite. Aquatic habitats provide the local invertebrates with valuable habitat which provides foraging opportunities for a range of fauna. The habitat will also provide local fauna with drinking water.
BL3 – Buildings and artificial surfaces	Buildings, structures and artificial surfaces present within the application site include an office, maintenance shed, part of the large open-sided shed covering the concrete block area, weighbridge, wheel-wash and the access road into the site (see Photograph 5-10 in Appendix 5-B).	Application site	Local (lower)	Anthropogenic features that provide negligible opportunities for wildlife.



Species



5.46 Table 5-7 provides a summary of species of importance and an evaluation of the site for these species.



		Table 5-7 Identification and Evaluation of Spece	cies	ACCENT
Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Flora				0
Protected, rare and notable species	NPWS holds records for Red Hemp-nettle <i>Galeopsis</i> <i>angustifolia</i> , in the 10km grid square N80. This record does not relate to the application site or within the immediate surrounding area. No records of protected, rare or notable species of flora were returned by NBDC.	During the Habitat Survey no protected, rare or notable species of flora were recorded at, or immediately adjacent the application site during the survey.	Not applicable	All reasonable likelihood ot absence
Non-native invasive species	No non-native invasive species of flora, as listed under the either the Wildlife Act 1976 (as amended) or European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) were returned by NBDC within the 2km search area.	During the updated survey one stand of wall cotoneaster <i>Cotoneaster</i> <i>horizontalis</i> (TN3) was identified at approximate ITM coordinates 682562 705773 (see Photograph 5-11). A small area of Japanese knotweed was noted on the southern edge of the raised platform area in the south-east corner of the site.	Vice- county ¹⁰ level	Species listed under the Wildlife Act 1976 (as amended) and European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) Japanese knotweed is a highly invasive species that can be difficult to treat but easily spread through plant and rhizome material when disturbed. It is listed as a high impact invasive species ¹¹ .



¹⁰ As per the NRA (2009). Guidelines for Assessment of Ecological Impacts of National Roads Schemes. <u>https://www.tii.ie/technical-services/environment/planning/Guidelines-for-Assessment-of-Ecological-Impacts-of-National-Road-Schemes.pdf</u>. (Last accessed September 2023).

¹¹ Kelly, J., O'Flynn, C., and Maguire, C. 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. <u>https://invasivespeciesireland.com/wp-content/uploads/2013/03/Risk-analysis-and-prioritization-29032012-FINAL.pdf</u>. (Last accessed September 2023).

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
				When occurring on grassland habitats <i>Cotoneaster horizontalis</i> decreases species richness and diversity, as well as affecting grassland specialist species ¹² . It is considered a medium impact invasive species ¹³ .
Mammals				P.A.
Badger	NBDC returned no records for badger <i>Meles meles</i> from within the 2km search area.	No setts were identified on the application site or within the ownership boundary.	County level	Badgers and their setts are protected under the provisions of the Wildlife Act, 1976, and the Wildlife Amendment Act, 2000. It is an offence to intentionally kill
		vegetation that was in areas too dense to survey fully and it is possible that potential badger setts exist within these areas that were not identified.		or injure a protected species or to willfully interfere with or destroy the breeding site or resting place of a protected wild animal ¹⁴ .
		Potential badger footprints (TN4) were identified at approximate ITM coordinates 682455 705406 (see Photograph 5-12). As such, badgers are considered present within the local area.		Badger setts are likely absent from the application site. However, it is uncertain whether badger setts are present within scrub located within the ownership boundary.
		The surrounding landscape surrounding the site and the ownership boundary comprise mostly agriculture grassland and hedgerows and are considered suitable for badgers.		

¹² Piqueray J., Mahy G., and Van der Hoeven S., (2008). Naturalisation and impact of a horticultural species, *Cotoneaster horizontalis* in biodiversity hotspots in Belgium. <u>https://orbi.uliege.be/bitstream/2268/16142/1/belgian-journal-2008.pdf</u>. (Last accessed September 2023).



¹³ Kelly, J., O'Flynn, C., and Maguire, C. 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. <u>https://invasivespeciesireland.com/wp-content/uploads/2013/03/Risk-analysis-and-prioritization-29032012-FINAL.pdf</u> (Last accessed September 2023).

¹⁴ National Roads Authority (2006). Guidelines for the treatments of badgers prior to the construction of national road schemes. <u>https://www.tii.ie/tii-library/environment/construction-guidelines/Guidelines-for-the-Treatment-of-Badgers-prior-to-the-Construction-of-a-National-Road-Scheme.pdf</u> (Last accessed September 2023).

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Bat assemblage	NBDC returned no records for any bat species within the 2km search area.	Roosting bats Refer to Appendix 5-C for details of the Preliminary Roost Assessment undertaken on the site. In summary, two trees were identified with moderate potential for roosting bats at TN5 and TN6 (see Photographs 5-13 and 5-14 in Appendix 5-B). All of the trees within the application site, due to their age, condition and absence of potential roosting features (i.e., cracks, crevices, rot holes, split branches) are assessed as having negligible suitability for roosting bats. All the buildings within the application site due to their design are assessed as having negligible suitability for roosting bats. Commuting and foraging bats	County level	All bat species are fully protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the EC (Birds and Natural Habitats) Regulations 2011. Roosting bats The application site provides negligible roosting opportunities for bats. The two trees identified within the ownership boundary are unlikely to be subjected to any additional impacts from the planned further development within the application site. Commuting and foraging bats The application site provides some foraging habitat for a range of bat species, particularly along the site boundaries. Generally, the centre areas of the application site are
		The habitat within the centre of the application site was assessed as having negligible potential for commuting and foraging bats, with mostly ED2 and ED3 providing limited value for bats. The habitats of highest value comprised scrub and treelines, which were limited to the boundaries of the application site. These habitats provided suitable foraging habitats and also comprised linear features that may provide commuting habitat for bats.		considered to be of lower quality. The application site is unlikely to be important or critical to any particular species of bat, or for maintenance of the local population status of any bat species.



Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
		The application site provides low quality foraging habitat for bats with few connectivity features linking the wider countryside to the application site with the potential to be used by commuting bats. The higher value habitats for commuting and foraging bats are limited to the application site boundaries and habitats to the north- west of the ownership boundary (i.e., outside the application site).		FD: 2803202
Hedgehog	NBDC returned a solitary record for hedgehog (<i>Erinaceus europaeus</i>) from within the 2km search area. This record does not relate to the application site.	During the habitat survey no evidence was found to indicate the presence of hedgehog within the application site. The was still considered to lack suitable habitats for this species, other than limited areas along the site boundaries. Suitable habitat does exist for hedgehog within the areas surrounding the application site. Therefore, hedgehog are considered present within the local area, although are unlikely to use the application site.	Local (higher) level	Protected under the Wildlife acts 1976 and subsequent amendments. Considered likely present within the local area. It is unconfirmed on the application site. However, all reasonable likelihood of absence within the application site considering the general lack of suitable habitats.
Other mammal species	NBDC returned a solitary record for red fox (<i>Vulpes</i> <i>vulpes</i>) but not within or immediately adjacent the application site	During the habitat survey with the exception of some field signs of rabbit <i>Oryctolagus cuniculus</i> no other evidence was found of any other protected or notable mammal species within or immediately adjacent to the application site.	Local (lower) level	Site providing some localised value to small mammals but is not likely to be critical in maintaining the local population status of any particular species.



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Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
		The habitat survey did not record any evidence of other mammals on the application site. It is anticipated that the limited vegetated habitats, limited mostly along the boundaries, is likely to support foxes <i>Vulpes vulpes</i> and rabbits.		r.D. 1803 202
Birds				*
Bird assemblage	NBDC returned records for four species of birds within the search area, of which only one species is listed under Annex I of the EU Birds Directive, namely peregrine falcon (<i>Falco peregrinus</i>).	The following bird species were identified during the updated survey: hooded crow <i>Corvus cornix</i> , buzzard <i>Buteo buteo</i> , swallow <i>Hirundo rustica</i> , blue tit <i>Cyanistes caeruleus</i> , robin <i>Erithacus rubecula</i> , and woodpigeon <i>Columba palumbus</i> . Swallow is a Birds of Conservation Concern Ireland (BoCCI) amber-listed species. All other species noted are green listed bird species ¹⁵ . It is possible that the swallows may find nesting value on the application site buildings. Ground nesting birds require large open areas.	Local (higher) level	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. Swallow amber-listed species under BoCCI. The application site provides opportunities for a range of typical common and widespread species associated with sand and gravel pits, secondary woodland and farmland but is not likely to be important or critical for any particular individual species or local populations of birds given the availability of alternative habitat in the wider surrounding area.

 ¹⁵ Gilbert G., Stanbury A., and Lewis L., (2021). Birds of Conservation Concern in Ireland 2020-2026. Irish Birds 9: 523-544. https://birdwatchireland.ie/app/uploads/2021/04/BOCCI4-leaflet-2-1.pdf

 1.pdf
 (Last accessed September 2023).

 Kilsaran Concrete Unlimited Company Halverstown, Kilcullen, Co. Kildare Increased Intake and Extension of Permission for Existing SRF
 5-21 March 2024

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
		The grasslands are considered to be too small in size to provide suitable nesting habitat for ground-nesting birds, with fragmented habitats and increased edge-effects anticipated to limit nesting success for ground nesting birds ¹⁶ by likely increasing the risk of increased predation risk (i.e., by foxes and/or badgers).		10. 18 03 101×
		The scrub habitats are suitable for a range of nesting passerine species.		
		The grasslands may support foraging birds including passerine and birds of prey.		
Amphibians				
Common frog	NBDC returned no records for common frog (<i>Rana</i> <i>temporaria</i>) within the 2km search area. Common frog has historically been recorded at the former sand and gravel pit at Halverstown by SLR during past fieldwork and ecological surveys.	During the habitat survey no common frogs were recorded within the application site through a search of potential refuges. Much of the application site remains sub-optimal for common frog. Potentially suitable breeding habitat was located outside the application site through the wet ditch. Suitable terrestrial habitat was limited mainly to the site boundaries and offsite through scrub, grasslands, and treelines.	Local (higher) level	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. A typically common and widely distributed species in Ireland and Co. Kildare. Potential terrestrial habitat for low to medium numbers of common frog but is not likely to be critical in maintaining the local population status of this species given the availability of other areas of suitable terrestrial habitat within the immediate surrounding area.

¹⁶ Stroud, D.A., Reed, T.M., Pienkowski, M.W. and Lindsay, R., 1988. Birds, bogs and forestry: the peatlands of Caithness and Sutherland. Nature Conservancy Council. Kilsaran Concrete Unlimited Company Halverstown, Kilcullen, Co. Kildare Increased Intake and Extension of Permission for Existing SRF



Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Smooth Newt	NBDC returned no records for smooth newt <i>Lissotriton</i> <i>vulgaris</i> within the 2km search area. Smooth newt has historically been recorded by SLR during previous fieldwork and ecological surveys at the former sand and gravel pit at Halverstown – located at site of a former silt lagoon in the southern part of the application site.	During the Habitat Survey no smooth newts were recorded within the application site through a search of potential refuges. The wet ditch may provide suitable breeding habitat for this species and is linked to potentially suitable terrestrial habitat through adjacent scrub and grasslands.	County level	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2009 A species widely distributed throughout Ireland but not having been recorded in large parts of Co. Kildare. Potential terrestrial habitat for low numbers of smooth newt but is not likely to be critical in maintaining the local population status of this species given the absence of any suitable breeding habitat and the availability of other areas of suitable terrestrial habitat within the immediate surrounding area.
Reptiles				
Common lizard	There are no historical records for common lizard <i>Zootoca</i> <i>vivipara</i> at, or within 2km search area of the application site.	No common lizards were identified on the application site, and potentially suitable habitat (i.e., scrub and grasslands) are limited to the application site boundaries or small fragmented areas surrounded by unsuitable spoil and bare ground. As such, common lizard can't be scoped out of the local area but are considered highly unlikely to be present within the application site.	Local (higher) level	Protected under the Schedule Wildlife Act 1976 (and subsequent amendments). All reasonable likelihood of absence within the application site. Unclear whether reptiles are present in the surrounding habitats.



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Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Invertebrates				
Invertebrates	NBDC did not return any records for any protected, rare or notable species of invertebrates within the 2km search area.	The survey identified the following invertebrates on the application site small tortoiseshell <i>Aglais urticae</i> , red admiral <i>Vanessa atalanta</i> , and large white butterfly <i>Pieris brassicae</i> .	Local (higher) level	The site provides potential habitat for a wide range of invertebrates but is unlikely to be important or critical to any particular species or taxonomic group given the availability of
		It is anticipated that the aquatic habitat, through the wet ditch, and the transitional woodland habitats, through existing scrub, may provide valuable habitats for invertebrates on the application site and the surrounding area.	bated that the aquatic rough the wet ditch, and the il woodland habitats, through crub, may provide valuable or invertebrates on the in site and the surrounding	alternative habitat in the wider Surrounding area.
		In addition, the recolonising bare ground and grassland habitats may provide an abundance of flowering species that may provide a suitable food source for a range of invertebrates.		
		Overall, the habitats comprising the application site are anticipated to be of limited value for notable invertebrates, with habitats comprising mostly common and widespread habitats and significant areas of unvegetated habitats through spoil and bare ground.		



Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
Other Importar	nt Species			Š.
Other species not identified above	NBDC did not return any records for any other important species within the 2km search area.	During the Habitat Survey, no other protected, rare, or notable species were recorded. Though the application site may support low numbers of common and widespread species it is considered highly unlikely that any other specially protected species would be present based on the habitats present.	Not applicable	All reasonable likelihood of absence



Summary of Ecological Features for Impact Assessment

- 5.47 In accordance with CIEEM guidelines only ecological features considered to be important should be carried forward for any detailed assessment. It is not necessary to carry out a detailed assessment of features that are sufficiently widespread, unthreatened, and resilient to project impacts and will remain viable and sustainable.
- 5.48 Transport Infrastructure Ireland guidelines indicate that where receptors have been evaluated at a value of 'Local (lower)' no further assessment is deemed necessary as the impact on these receptors is not likely to be of significance. However, where protected species are present and there is a potential for a breach in wildlife legislation, then these species are considered as important ecological features, regardless of what level they have been evaluated.
- 5.49 Based on the above, the important ecological features with the potential to be affected by planned further development and continued activities at the existing backfilling and recovery facility at Halverstown and to be carried forward for further ecological impact assessment are identified in Table 5-8.

Key Features	Important Ecological Feature
Designated sites	Dunlavin Marshes pNHA
	Curragh (Kildare) pNHA
Habitats	Grasslands
	Treelines
	Scrub
	Drainage ditch
Species	Wall cotoneaster
	Japanese knotweed
	Badger
	Roosting bats
	Commuting and foraging bats
	Hedgehog
	Bird assemblage
	Common frog
	Common lizard
	Smooth newt
	Invertebrates

Table 5-8Identified Important Ecological Features



IMPACT ASSESSMENT AND MITIGATION

- 5.50 The following section assesses the ecological impacts from the further development and continued activity at the existing backfilling and recovery facility at Halverstown on important ecological features identified from the preliminary desk-based study, baseline surveys and evaluation of the ecological features.
- 5.51 Both qualitative and quantitative information has been used to identify likely significant ecological impacts, including the positive, negative, direct, indirect and the cumulative environmental effects.
- 5.52 To assess the effects of the proposed scheme it is essential that the impacts that could arise are identified and characterised. The impacts that require consideration in the EcIA are based upon knowledge of the development and of the important ecological features. This can only be undertaken with a thorough understanding of ecological processes and how flora and fauna react to the range of impacts that could occur.

Proposed Development

- 5.53 A detailed description of the development is presented in Chapter 2 of the EIAR, but in summary, the current project for which planning permission is being sought provides for a revised development scheme at the existing soil recovery facility at Halverstown in view of the existing sustained high level of demand for soil recovery capacity.
- 5.54 Planning permission is specifically sought for the following:
 - an increase in the permitted total intake of soil and stone and broken rock to the existing licensed recovery facility, from 1.2 million tonnes to 2.06 million tonnes. The additional intake to the facility will comprise a mix of soil and stone managed as waste (as heretofore) and as (non-waste) by-product;
 - an extension to the permitted life of the existing facility of 3 years (to December 2029) in order to accommodate the additional soil and stone intake;
 - continued shared use of existing, co-located site facilities, structures and infrastructure (including the site office, staff welfare facilities, weighbridge (with dedicated office), wheelwash, hardstand areas, fuel storage tanks and site access road);
 - continued soil and stone intake at a rate of up to 300,000 tonnes per annum, of which no more than 95,000 tonnes (per annum) will be managed as waste;
 - continued separation of any construction and demolition waste (principally concrete, metal, timber, PVC pipework and plastic) inadvertently imported to the facility, prior to removal off-site to authorised waste disposal or recovery facilities;
 - continued use of a section of the existing concrete block curing shed as a waste inspection and quarantine facility;
 - continued environmental monitoring of noise, dust and groundwater for the duration of the site recovery and restoration activities and for a short period thereafter (and in accordance with EPA waste licence requirements);
 - continued temporary stockpiling of topsoil pending its re-use as cover material for final restoration of the site; and
 - ultimate restoration of the modified final landform (entailing harrowing, topsoiling and seeding) to establish a native woodland habitat on the northern side of the access road and grassland habitat on the southern side.
- 5.55 The lands will be backfilled using only inert soil materials imported from external, preapproved development sites. No peat, contaminated soils or non-hazardous waste will be accepted at the proposed recovery facility.



Identification and Characterisation of Potential Impacts

- 5.56 All of the site infrastructure required to service the proposed extension (to the life and capacity) of the existing development at Halverstown is already in place. As such there is no construction or development phase associated with the proposed development and no requirement to consider construction phase impacts.
- 5.57 The proposed development will be carried out in a phased approach and no distinction has been made between any preparation of the site (construction phase), the operational phase and the final long-term restoration of the former sand and gravel pit.

Potential Impacts (Operational Phase)

5.58 The sources of potential impacts arising from the further development and continued activities at the existing backfilling and recovery facility at Halverstown and the relevant important ecological features which are likely or have the potential to be directly or indirectly affected by any particular impact source in the potential zone of influence of the development (and in the absence of any mitigation), are outlined in Table 5-9 below.

Impact Source	Nature of Impact and Zone of Influence	Important Ecological Feature Potentially Affected
Habitat loss, damage and fragmentation	Habitat loss involves the direct destruction or physical take-up of vegetation, or the removal of other structures with conservation interest. Habitat loss may also occur indirectly as a result of a change in land-use or water management, for instance drying-up of ponds or induced successional events leading to a change in habitat type. Habitat fragmentation is concerned with spatial processes, such as negative edge effects (e.g., colonisation by 'aggressive' species or successional changes) and dispersal problems that can become increasingly severe as habitat lost and remaining habitat is divided into smaller units. Fragmented habitats are likely to be more vulnerable to external factors that may have a negative effect upon them; e.g., disturbance, and may be less resilient to change (including climate and management change) than connected habitats because colonising species may be unable to reach the habitat to re-colonise in the event of species loss. Habitat loss can have a direct impact on individual populations and assemblages of species result in the direct loss of individuals or populations of animal species, or indirectly by increasing levels of stress placed upon populations of some species through negative edge effects (e.g., predation pressure) and dispersal problems that can become increasingly severe as habitat lost and remaining habitat is divided into smaller units.	GS2 – Dry meadows and grassy verges WS1 - Scrub WL2 Treelines FW4 – Drainage ditch Badger Commuting and foraging bats Hedgehog Commuting and foraging bats Bird assemblage Common frog Smooth newt Invertebrates

Table 5-9 Sources of Potential Impacts



Impact Source	Nature of Impact and Zone of Influence	Important Ecological Feature Potentially Affected
Disturbance from human activity, noise, and vibration	Increases in disturbance, as a result of human activity can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing. The response of individual species to increased levels of human disturbance will depend upon a number of factors including the sensitivity, reproductive status, previous exposure to human disturbance, behaviour during the event, species tolerance to disturbance, location in relation to the source, availability of alternative nearby habitat, and environmental factors (i.e., topography, vegetation and atmospheric conditions which can influence noise levels). The level of disturbance will also be dependent upon the existing ambient noise levels and maximum noise levels. Noise It is generally accepted that for noise, certain species or groups of species can be impacted upon up to a disturbance with these distances reducing for low level and/or continuous disturbance levels. Evidence suggests that in general wildlife, with the exception of the most sensitive, will adjust and tolerate long-term increases in low-medium-level and continuous noises. Guidance published under AQTAG09 ¹⁷ indicates that where noise levels are below 80dB L _{Amax} and 55dB L _{Aeq} ,1hr as measured at a nest site for birds or other feature used by wildlife it is considered unlikely that it will have an adverse impact on any such species. Visual Disturbance Visual disturbance from human activity can include the movement of people, machinery and plant and which can result in the disturbance of species by causing increased anxiety and flight due to perceived danger. The response to visual disturbance is highly variable between species, threat type and habituation to human contact and can typically range from 50 to 500m although for many species this is generally below 300m in open situations	Bacgers Roosting bats Commuting and foraging bats Hedgehog Bird assemblage Common lizard Common frog Smooth newt
Dust deposition	Traffic movements, the stockpiling and handling of soils (particulate) materials, the movement and use of soil in backfilling land and the separation of any intermixed construction and demolition waste materials (and other works) have potential to generate dust. Literature suggests that the most sensitive species area to be affected by dust deposition at levels above 1000 mg/m ² /day ¹⁸ which is five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans.	GS2 – Dry meadows and grassy verges WS1 - Scrub WL2 Treelines FW4 – Drainage ditch

¹⁷ Ormerod, L., Goodlad, N. and Horton, K. (2005) A QTAG09 – Guidance on the Effects of Industrial Noise on Wildlife. Air Quality Technical Advisory Group.



¹⁸ Farmer, A.M. (1993). The Effects of Dust on Vegetation – A Review. Environmental Pollution Vol.79, Issue 1, Pages 63-75.

Impact Source	Nature of Impact and Zone of Influence	Important Ecological Feature Potentially Affected
	Fugitive dust from mineral extraction sites is typically deposited within 100-200m of the source; the greatest proportion of which, comprising larger particles (greater than 30 microns) is deposited within 100m ¹⁹ . Where large amounts of dust are deposited on vegetation over a long time-scale (a full growing season for example) there may be some adverse effects upon plants restricting photosynthesis, respiration, and transpiration. Furthermore, it can lead to phytotoxic gaseous pollutants penetrating the plants. The overall effect would be a decline in plant productivity, which may then have indirect effects on the quality of the surrounding habitats and associated fauna. The amounts of dust deposited and its effects are also dependent upon weather conditions as in wet weather less dust will be generated and that which has been deposited upon foliage is likely to be washed off. In accordance with guidance produced by the UK Institute of Air Quality Management (IAQM) ²⁰ an assessment of the effects of dust will normally only be required where an ecological receptor occurs within 50m boundary of the site or 50m of routes used by construction vehicles on public highways up to 500m from the site entrance.	Tologian A
Spread of invasive species within the site or	The movement of traffic within the application site, without appropriate mitigation and biosecurity measures risks inadvertently spreading invasive non-native species Japanese knotweed and wall cotoneaster within the application site or offsite.	Onsite and offsite habitats
offsite	This may cause a reduction of biodiversity of native habitats on the site and beyond.	
	The zone of influence is considered to be the application site, the ownership boundary and within the immediate surrounding area.	

Assessment of Effects and Mitigation Measures

5.59 Table 5-10 below details the assessment of predicted effects on the identified and relevant important ecological features from the planned further development / continued activities at the existing soil waste recovery facility at Halverstown and mitigation measures to prevent, reduce or offset any potential effects.



¹⁹ Department of the Environment (1995). The Environmental Effects of Dust from Surface Mineral Workings. Volume 1: Summary Report & Best Practice Guides. HMSO. ²⁰ Holman et al (2014). *IAQM Guidance on the Assessment of Dust from Demolition and Construction*. Institute of Air Quality

Management, London.

 Table 5-10

 Assessment of Effects on Identified Relevant Important Ecological Features

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Offsite habitats		0
Dust deposition	Assessment of Effects:	Not significant
	The deposition of dust from the operation of the soil recovery facility is not predicted to be at levels or of a reactive nature where it is anticipated that there will be any adverse effects on the trees, shrubs or the ground floras of these features.	, PA
	Mitigation:	Not applicable
	No specific ecological mitigation is required as impact is assessed as not significant.	
Potential spread of invasive non-native species	 Assessment of Effects: The unmitigated works risk causing the spread of the invasive non-native species offsite. Causing the spread of invasive species would cause an offense under the EU Invasive Species Regulations²¹. Vehicles and heavy plant working on the application site may pick up parts of invasive species on their tyres / tracks. They may then deposit these elsewhere on the site or cause the spread of these invasive species elsewhere offsite. Similarly, the spread of these invasive species may be caused by workers either by the incorrect disposal of the invasive species or picking up elements of the invasive species with their boots. This may impact and reduce local biodiversity in the long-term if the invasive species becomes established within existing habitats. 	Significant at a vice-county level
	Mitigation: The existing facility implements biosecurity measures such as the wheelwash facility and prior screening procedures in respect of soils imported for backfilling purposes on an ongoing basis. Invasive species training is given to all employees at the facility and an Invasive Species Management Plan has been put in place in compliance with the Waste Licence. Care is taken not to spread any invasive plant identified on site (or any part of it), including incorrect disposal of the plant (or any part of it).	Not significant

²¹ NBDC (2021). Legislation and policy. <u>https://invasives.ie/about/legislation-policy/</u>. (Last accessed September 2023).

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	Any invasive species identified on the site are buried to a minimum depth of 1m, which is considered sufficient to prevent the regrowth occurring from the seeds ²² . Alternatively, the use of qualified contractors, skilled in the control of invasive flora will be sought to eradicate the plant from the site.	78/03
Treelines		20
Habitat loss, damage, and fragmentation	Assessment of Effects: The proposed backfilling scheme at the north-eastern corner of the application site will not result in any direct loss of the treeline that runs along the northern boundary. The movement of vehicles and placing of imported soils on land in close proximity to the treeline has the potential to inadvertently cause damage to individual and groups of trees and shrubs, including severing of roots, or through compaction of soils or localised changes in hydrological conditions, which could have a direct and/or indirect impact on the health of the affected trees and the integrity of the treeline features.	Significant at local (higher) level
	 Mitigation: An adequate root protection zones will be established for the treeline to ensure their protection from accidental damage during backfilling and recovery activities, including from: physical damage to the roots by cutting and severing; compaction around the trees causing asphyxiation and reduction of water and minerals to the roots; spillage of contaminants; and physical damage to tree stems and branches. Where necessary the root protection zone will be delineated by the installation of temporary fencing. 	Not significant

²² Invasive Species Ireland (n.d.). <u>https://invasivespeciesireland.com/wp-content/uploads/wp-post-to-pdf-enhanced-cache/1/legislation-ni.pdf</u>. (Last accessed September 2023)



Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Dust deposition	Assessment of Effects:	Not significant
	The deposition of dust from the continued operation of the soil recovery facility is not predicted to be at levels or of a reactive nature where it is anticipated that there will be any adverse effects on trees, shrubs, or the ground floras of these features.	78.03
	Mitigation:	Not applicable
	No specific ecological mitigation is required as impact is assessed as not significant.	NA NA
Potential spread of	Assessment of Effects:	Significant at local (higher)
invasive non-native species	The unmitigated works risk causing the spread of the invasive non-native species into retained treelines. Causing the spread of invasive species would cause an offense under the EU Invasive Species Regulation.	level
	Vehicles and heavy plant working on the application site may pick up parts of invasive species on their tyres / tracks. They may then deposit these elsewhere on the site or cause the spread of these invasive species within the site. Similarly, the spread of these invasive species may be caused by workers either by the incorrect disposal of the invasive species or picking up elements of the invasive species with their boots. This may impact and reduce local biodiversity in the long-term if the invasive species becomes established within existing habitats.	
	Mitigation:	Not significant
	The existing facility implements biosecurity measures such as the wheelwash facility and prior screening procedures in respect of soils imported for backfilling purposes on an ongoing basis. Invasive species training is given to all employees at the facility and an Invasive Species	
	Management Plan has been put in place in compliance with the Waste Licence.	
	Care is taken not to spread any invasive plant identified on site (or any part of it), including incorrect disposal of the plant (or any part of it).	
	Any invasive species identified on the site are buried to a minimum depth of 1m, which is considered sufficient to prevent the regrowth occurring from the seeds.	
	Alternatively, the use of qualified contractors, skilled in the control of invasive flora will be sought to eradicate the plant from the site. Care will be taken not to spread any invasive plant or any part of it, including the incorrect disposal of the plant (or any part of it).	



Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Grasslands	X X).
Habitat loss, damage, and fragmentation	Assessment of Effects: Most grasslands are located within the ownership boundary and outside the application site, which will not be impacted. Small areas of grasslands will be impacted by further infilling of the north- eastern corner of the application site. The stripping of top-soils, movement of vehicles and placing of imported soils on land in close proximity to the grasslands may cause compaction of soils or localised changes in hydrological conditions, which could have a direct and/or indirect impact on the health of retained grasslands.	Significant at local (higher) leve
	 Mitigation: Any retained grasslands will be adequately protected with an appropriate buffer. Fencing can be erected around the habitats to prevent the unintentional damage potentially caused by vehicles entering these areas. Retained grasslands will be protected from accidental damage during all activities carried out during the operation of the soil recovery facility from: physical damage caused by heavy vehicles / plant; compaction around the soils; and spillage of contaminants. 	Not significant
Dust deposition	Assessment of Effects: The deposition of dust from the continued operation of the soil recovery facility is not predicted to be at levels or of a reactive nature where it is anticipated that there will be any adverse effects on the trees, shrubs or the ground floras of these features.	Not significant
	Mitigation : No specific ecological mitigation is required as the impact is assessed as not significant.	Not applicable
Potential spread of invasive non-native species	Assessment of Effects: The unmitigated works risk causing the spread of the invasive non-native species into retained grasslands. Causing the spread of invasive species would cause an offense under the EU Invasive Species Regulation.	Significant at local (higher) level



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Impact	Assessment of Effects	C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.	Significance of Impact Before and After Mitigation (Residual Impact)
	Vehicles and heavy plant working on the application site may pick up parts of invasive their tyres / tracks. They may then deposit these elsewhere on the site or cause the sit these invasive species within the site. Similarly, the spread of these invasive species caused by workers either by the incorrect disposal of the invasive species or picking u of the invasive species with their boots. This may impact and reduce local biodiversity term if the invasive species becomes established within existing habitats.	species on pread of may be p elements r in the long-	01/60/81.
	Mitigation : The existing facility implements biosecurity measures such as the wheelwash facility a screening procedures in respect of soils imported for backfilling purposes on an ongoing the screening procedures in respect of soils imported for backfilling purposes on an ongoing screening procedures in respect of soils imported for backfilling purposes on an ongoing screening procedures in respect of soils imported for backfilling purposes on an ongoing screening procedures in respect of soils imported for backfilling purposes on an ongoing screening procedures in the screening scre	and prior ing basis.	Not significant
	Invasive species training is given to all employees at the facility and an Invasive Spec Management Plan has been put in place in compliance with the Waste Licence.	ies	
	Care is taken not to spread any invasive plant identified on site (or any part of it), incluincorrect disposal of the plant (or any part of it).	ıding	
	Any invasive species identified on the site are buried to a minimum depth of 1m, whic considered sufficient to prevent the regrowth occurring from the seeds.	h is	
	Alternatively, the use of qualified contractors, skilled in the control of invasive flora wil to eradicate the plant from the site. Care will be taken not to spread any invasive plan of it, including the incorrect disposal of the plant (or any part of it).Care will be taken n any invasive plant or any part of it, including the incorrect disposal of the plant (or any part of any plant (or any part of the plant (or any plant disposal	be sought t or any part ot to spread part of it).	
Drainage ditch			
Habitat loss, damage, and fragmentation	Assessment of Effects: The ditch is located outside the application site boundary and will not be directly impa habitat loss, damage, or fragmentation. The ditch may be impacted by accidental spillages of pollutants and/or significant incr surface runoff causing potential sediments or pollutants to enter the ditch and affect th chemistry and potentially harm the aquatic floral communities that are supported by th This may also cause impacts to invertebrates or amphibians that may use the ditch fo purposes.	cted by eases in ne water nis habitat. r breeding	Significant on a local (higher) level



Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	Mitigation:	Not significant
	The site will keep and maintain spill kits on the site to prevent and minimise the potential spread of pollutants entering the ditch in the event of any accidental leaks or spillages on the site.	200
Dust deposition	Assessment of Effects:	Not significant
	The deposition of dust from the operation of the soil recovery facility is not predicted to be at levels or of a reactive nature where it is anticipated that there will be any adverse effects on the trees, shrubs or the ground floras of these features.	FOR
	Mitigation:	Not applicable
	No specific ecological mitigation is required as impact is assessed as not significant.	
Scrub		
Habitat loss, damage,	Assessment of Effects:	Significant at Local (higher)
and fragmentation	The continued backfilling operations at the application site will not result in the loss of any scrub along the site's boundaries.	level
	The stripping of top-soils, movement of vehicles and placing of imported soil materials on land in close proximity to the scrub has the potential to inadvertently cause damage to individual and groups of trees and shrubs, including severing of roots, or through compaction of soils or localised changes in hydrological conditions, which could have a direct and/or indirect impact on the scrub features.	
	Mitigation:	Not significant
	An adequate root protection zones will be established for the scrub to ensure their protection from accidental damage from ongoing backfilling and recovery activities including from:	
	physical damage to the roots by cutting and severing;	
	compaction around the trees causing asphyxiation and reduction of water and minerals to the roots;	
	spillage of contaminants; and	
	physical damage stems and branches.	
	Where necessary, the root protection zone will be delineated by the installation of fencing.	



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Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Dust deposition	Assessment of Effects:	Not significant
	The deposition of dust from the continued operation of the soil recovery facility is not predicted to be at levels or of a reactive nature where it is anticipated that there will be any adverse effects on the trees, shrubs, or the ground floras of these features.	28.03
	Mitigation:	Not applicable
	No specific ecological mitigation is required as impact is assessed as not significant.	T A
Potential spread of	Assessment of Effects:	Significant at local (higher)
invasive non-native species	The unmitigated works risk causing the spread of the invasive non-native species into retained scrub. Causing the spread of invasive species would cause an offense under the EU Invasive Species Regulation.	level
	Vehicles and heavy plant working on the application site may pick up parts of invasive species on their tyres / tracks. They may then deposit these elsewhere on the site or cause the spread of these invasive species within the site. Similarly, the spread of these invasive species may be caused by workers either by the incorrect disposal of the invasive species or picking up elements of the invasive species with their boots. This may impact and reduce local biodiversity in the long-term if the invasive species becomes established within existing habitats.	
	Mitigation:	Not significant
	The existing facility implements biosecurity measures such as the wheelwash facility and prior screening procedures in respect of soils imported for backfilling purposes on an ongoing basis.	
	Invasive species training is given to all employees at the facility and an Invasive Species Management Plan has been put in place in compliance with the Waste Licence.	
	Any invasive species identified on the site are buried to a minimum depth of 1m, which is considered sufficient to prevent the regrowth occurring from the seeds.	
	Alternatively, the use of qualified contractors, skilled in the control of invasive flora will be sought to eradicate the plant from the site. Care will be taken not to spread any invasive plant or any part of it, including the incorrect disposal of the plant (or any part of it).Care will be taken not to spread any invasive plant or any part of it, including the incorrect disposal of the plant (or any part of it).	

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Badger		О.
Habitat loss, damage	Assessment of Effects:	Significant on a county level
and fragmentation	No badger setts are located within the application site. It is unknown whether badger setts are located within the scrub located outside the application site and within the ownership boundary. These areas will be retained in the proposed development.	×03 20
	The proposed works will mostly take place in unvegetated habitats that are suboptimal for foraging badgers. However, given the current ongoing works at the application site it is considered highly unlikely that badgers will use these areas. The infilling of these areas will not cause any additional losses or impacts to badger habitat.	TA .
	Mitigation:	Not significant
	The habitats of highest value for badgers (i.e., scrub and treelines) will be retained.	
Disturbance from	Assessment of Effects:	Significant on a county level
human activity, noise and vibration	Any potential badger setts located within 50m of the proposed works may be impacted by disturbance by the proposed works. Any setts located within 30m of the proposed works may be damaged by the proposed works.	
	However, it should be noted that badger setts that may be present in proximity to the application site (if any) would already be exposed (and accustomed) to high levels of disturbance and the further works is not anticipated to cause them any additional damage or disturbance.	
	Individual badgers may be impacted by general construction works (such as uncovered excavations, uncapped pipes (greater than 300mm), etc.) although no work of this nature is envisaged or likely at the application site.	
	Mitigation:	Not significant
	Workers on the site will be aware of the potential for badgers to be present at or around the site. Although unlikely given that the proposed development will not result in any additional ground disturbance, over and above that previously permitted (under Planning Ref. 18/453), should potential setts are identified during the planned further development and continued site activities, all works will cease within 30m of the sett entrance(s), the advice of a qualified ecologist will be sought and appropriate mitigation measures will be provided (if applicable).	



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Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	 Should the presence of a badger sett be confirmed, sett closure may be required, which will need a NPWS licence. General mitigation measures to be applied will include: Any unplanned excavations will be covered overnight or provided an earth ramp on at least one site, to avoid accidentally entrapping badgers inside; No unnecessary stockpile will be created or left for any prolonged period of time to minimise the risk of new setts being created; and Any necessary stockpiles will be compacted using site plant and machinery and covered, where possible to minimise the risk of it being used for sett creation. 	. 18103 101×
Bat Assemblage		
Habitat loss, damage, and fragmentation	Assessment of Effects: Roosting bats No roosting bat habitat will be lost by the proposed works. <u>Commuting and foraging bats</u> The habitats to be impacted (i.e., spoil and bare ground / recolonising bare ground) are considered sub-optimal for commuting and foraging bats and the loss of these habitats are not significant. The habitats of highest value for commuting and foraging bats comprise treelines, scrub and grasslands. Scrub and treelines will be retained and only a limited area of grassland will be lost, located to the north-east of the application site. Overall, there will be a minor negative, short-term loss of potential foraging habitat.	Roosting bats Not significant <u>Commuting / foraging bats</u> Significant on a county level
	Mitigation : Treelines and scrub will be retained, maintaining the most valuable habitats for commuting and foraging bats.	Commuting / foraging bats Not significant
Disturbance from human activity, noise and vibration	Assessment of Effects: Roosting bats Two trees with moderate roosting potential were identified. TN6 was located approximately 10m from the application site boundary and TN5 was located approximately 55m from the application site boundary, at locations indicated in Figure 5-2.	Roosting bats Not significant Commuting / foraging bats Not significant



Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	These trees will not be lost and are currently exposed to high levels of noise and vibrations from current works. They are not expected to be impacted any further than at the present time. <u>Commuting and foraging bats</u> The further development and continued activities will cause noise and vibrations. However, this is expected to be at a similar level to that which is arising at the site currently. Therefore, no additional impacts are predicted.	1803203
	Mitigation: No mitigation required.	Roosting bats Not significant <u>Commuting / foraging bats</u> Not significant
Hedgehog		
Habitat loss, damage, and fragmentation	Assessment of Effects: Suitable habitat for hedgehog will be lost through the removal of limited areas of grassland within the application site leading to a minor negative and short-term impact.	Significant on a local (higher) level
	Mitigation: Habitats of highest value (i.e., scrub and treelines) will be retained.	Not significant
Disturbance from human activity, noise, and vibration	Assessment of Effects: Individual hedgehog could be impacted by general construction works (such as uncovered excavations, uncapped pipes (greater than 300mm), etc.), although no work of this nature is envisaged or likely at the application site.	Significant on a local (higher) level
	 Mitigation: General construction mitigation measures will include: Any unplanned excavations will be covered overnight; Avoid / minimise any disruption to boundary hedgerows. 	Not significant



Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Bird Assemblage	У.).
Habitat loss, damage, and fragmentation	Assessment of Effects: In the absence of mitigation, there would be adverse impact upon the assemblage of birds identified as being of Local (lower) value through the loss of scrub habitat However, based on the assemblage of birds recorded and the numbers likely to use the application site it is considered that any impact would be imperceptible on the population status of any particular species.	Significant at Local (lower)
	 Mitigation: Mitigation measures required to ensure compliance with Wildlife Act 1976 (as amended) prohibiting: their killing, injuring or taking; the damage, destruction or taking of nests in use or being built; and the taking or destruction of eggs, where nest sites are found to be present during any clearance of trees or shrubs. To avoid destruction of any such nests trees and shrubs required to be removed or felled should take place outside the bird breeding season (i.e. removal permitted from September through to February). 	Not significant
Disturbance from human activity, noise, and vibration	Assessment of Effects: All bird species at and in the vicinity of the former sand and gravel pit will be somewhat habituated to a degree of disturbance at the application site. The movement of vehicles and placing of imported soils across the site is not anticipated to significantly increase the overall levels of disturbance over and above existing levels to the extent that there would be any measurable effects on the local bird assemblage.	Not significant
	Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.	Not applicable



Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Common Frog).
Habitat loss, damage, and fragmentation	Assessment of Effects: The further development and continued operation of the existing soil recovery facility will not result in any loss of any known breeding pond used by common frog, but will result in the loss of distant terrestrial habitat (>1km from closest identified pond), which in the absence of mitigation, has the potential to cause the death or physical harm to individual animals and which may have a slight impact on the local population status of this species.	Significant at Local (lower)
	Mitigation:	Not applicable
	Mitigation required to ensure compliance with Wildlife Act 1976 (as amended) comprises the implementation of measures (if required) to capture common frogs from parts of the application site supporting suitable terrestrial habitat for this species and their relocation to a safe area under an appropriate derogation licence issued by NPWS, prior to any scrub clearance, soil stripping and placement of imported soil materials.	
Smooth Newt		
Habitat loss, damage, and fragmentation	Assessment of Effects: The further development and continued operation of the existing soil recovery facility will not result in loss of any waterbody used by smooth newts for breeding purposes but will result in the loss of potential distant terrestrial habitat (>1km from closest identified pond), which in the absence of mitigation, has the potential to cause the death or physical harm to individual animals and which may have a slight impact on the local population status of this species.	Significant at County level
	Mitigation : No specific ecological mitigation is required as the impact is assessed as not significant. However, mitigation required to ensure compliance with Wildlife Act 1976 (as amended) by the implementation of measures (if required) to capture smooth newts from parts of the application site supporting suitable terrestrial habitat for this species and their relocation to a safe area under an appropriate derogation licence issued by NPWS, prior to any scrub clearance, soil stripping and placement of imported soil materials.	Not applicable



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Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Invertebrates		
Habitat loss, damage, and fragmentation	Assessment of Effects: The proposed works will impact limited areas of grassland and recolonising bare ground. There will be a temporary reduction in pollinating plants that provide foraging habitat for invertebrates.	Significant on a local (higher value) level.
	Mitigation : High-value habitats for invertebrates (i.e., scrub and treelines) will be retained, maintaining suitable habitats for invertebrates on the site.	Not significant



Ecosystem Services

5.60 The application site at this current time is not considered to provide any ecosystem services including supporting, provisioning, regulating and/or cultural services.

Cumulative Impacts

- 5.61 Cumulative impacts are those which result from incremental changes caused by other past, present or reasonably foreseeable actions, together with those generated by the proposed development. Therefore, the potential impacts of the proposed development, cannot be considered in isolation but must be considered in addition to impacts already arising from existing or planned development.
- 5.62 A review of Kildare County Council online planning search facilities indicates that no other major developments are planned or have been granted planning permission in the last five years in surrounding townlands or within 2km of the application site that would be likely to result in any significant cumulative impacts on important ecological features, or on the biodiversity of the local area at this current time.
- 5.63 In light of the above, it is considered that there is no potential for other planned development to create significant adverse cumulative impacts for biodiversity in the local area.

ECOLOGICAL ENHANCEMENT AND COMPENSATION

- 5.64 No further recommendations for ecological enhancement and/or compensation are deemed necessary as part of the planned further development and continuation of backfilling and recovery activities at the existing soil recovery facility at Halverstown, or to ensure compliance with wildlife legislation.
- 5.65 Ultimately the backfilling and restoration of the application site to establish a native woodland habitat on the northern side of the access road and grassland habitat on the southern side (with wooded side slopes) as envisaged in the post-closure restoration plan (refer to Figure 2-5 of EIAR Chapter 2), will give rise to enhanced local biodiversity over the longer term.

MONITORING

5.66 Mitigation actions carried out under any derogation licences issued by NPWS (if required) would be expected to include a requirement for post-action monitoring.

LEGAL AND POLICY IMPLICATIONS

5.67 This section summarises the significance of impacts in the context of statutory legislation and planning policy.

Legal Implications

- 5.68 The planned further development and continued site activity at Halverstown has no implications for any statutory designated nature conservation sites.
- 5.69 The only statutory protected species with any relevance for the planned development are breeding birds, common frog and smooth newt. However, provided that appropriate mitigation strategies are put in place it will be possible for the planned further development to be carried out without the risk of breaching current wildlife legislation.



Policy Implications

5.70 Provided that all appropriate mitigation measures to ensure compliance with the Wildlife Act 1976 (as amended) in respect to breeding birds, common frog and smooth newt are implemented (if and when required), it is considered that these activities will comply with the requirements of current national and local planning policies relating to biodiversity.

CONCLUSIONS

- 5.71 SLR Consulting Ireland conducted an Ecological Impact Assessment to inform the wider Environmental Impact Assessment process and production of an EIAR to accompany the planning application by Kilsaran Concrete for an increase in the permitted soil and stone intake capacity and extended operational life of its existing soil recovery facility at a former sand and gravel pit in Halverstown, Co. Kildare.
- 5.72 The application site is not subject to any statutory or non-statutory designation and no such sites will be directly or indirectly impacted by continuation of backfilling and recovery activities at the site.
- 5.73 The continuation of existing development for a further period will not result in any loss of important habitat.
- 5.74 Provided appropriate mitigation measures are implemented for the protection of breeding birds common frog and smooth newt, as required by national wildlife legislation, there are no legal implications for any protected species.
- 5.75 A summary matrix of predicted impacts from continuation of existing development is presented in Table 5-11 below.



Table 5-11
Summary Matrix of Predicted Impacts from the Proposed Development

Value	Potential Impact	Direction	Probability	Magnitude	Duration	Frequency	Reversibility	Mitigation / Compensation Measures	Means of Delivering Mitigation / Compensation	Residual Impact
Offsite ha	abitats									~
Vice- county	Potential spread of invasive species	Negative	Possible	Minor	Permanent	Once	Reversible	Implementation of biosecurity measures to prevent the spread.	Planning condition	Not sign di cant
								Eradicate the invasive species on the site.		
Onsite ha	abitats									
Local (higher)	Potential habitat damage to treelines (<i>WL2</i> – <i>Treelines</i>), scrub (<i>WS1</i> – <i>Scrub</i>), and loss of grasslands (<i>GS2</i> – <i>Dry</i> <i>meadows and</i> <i>grassy verges</i>). Potential spread of invasive species within the site.	Negative	Likely	Minor	Temporary	Once	Reversible	Provision of buffer zones and protective fencing. Retain habitat where possible. Implementation of biosecurity measures to prevent the spread. Eradicate the invasive species on the site.	Planning condition	Not significant



Value	Potential Impact	Direction	Probability	Magnitude	Duration	Frequency	Reversibility	Mitigation / Compensation Measures	Means of Delivering Mitigation / Compensation	Residual Impact
Badger	Badger									
County	Potential habitat loss of foraging and sett creating habitat.	Negative	Possible	Minor	Temporary	Once	Reversible	General construction measures. Staff to be aware of potential	Planning condition	Not significant
	Potential harm to individual animals.							badgers and sett presence. Works to stop and further		
	Potential harm to undiscovered badger setts							advice to be sought if badgers or setts found on the site.		
Bat asse	mblage									
County	Potential loss or damage of commuting and foraging habitat.	Negative	Likely	Minor	Temporary	Once	Reversible	Habitats of highest value will be retained under the current proposals.	N/A	Not significant
Bird Ass	emblage									
Local (lower)	Direct loss of scrub habitat providing potential breeding habitat.	Negative	Certain	Negligible	Permanent	Once	Reversible	Removal of all suitable ground nesting habitat outside the breeding season (i.e., removal permitted from September through to February).	Planning Condition	Not significant



Value	Potential Impact	Direction	Probability	Magnitude	Duration	Frequency	Reversibility	Mitigation / Compensation Measures	Means of Delivering Mitigation / Compensation	Residual Impact
Hedgeho	g								ج.	
Local (higher)	Potential harm to individual animals	Negative	Likely	Minor	Temporary	Once	Reversible	General construction measures.	Planning condition	Not significant
Common	Frog									12
Local (higher)	Loss of distant terrestrial habitat	Negative	Certain	Minor	Permanent	Once	Irreversible	Capture and removal of individual animals from development footprint to safe area under an appropriate derogation licence issued by NPWS.	Planning Condition	Not * significant
Smooth I	Newt									
County	Loss of distant terrestrial habitat (GS2 Dry meadows and grassy verges and WS1 – Scrub)	Negative	Certain	Minor	Permanent	Once	Irreversible	Capture and removal of individual animals from the development footprint to safe area under an appropriate derogation licence issued by NPWS.	Planning Condition	Not significant
Invertebr	ates									
Local (higher)	Potential habitat loss, damage, and fragmentation	Negative	Certain	Slight	Temporary	Once	Reversible	High-value habitats for invertebrates (i.e., scrub, treelines) will be retained.	N/A	Not significant





FIGURES Figure 5-1 Designated Sites Figure 5-2 Habitat Map









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APPENDICES







APPENDIX 5-A Relevant Legislation and Planning Policy





APPENDIX 5-A Relevant Legislation and Planning Policy

RELEVANT LEGISLATION

EIA Directive

The EIA Directive, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC of 3 March 1997, Directive 2003/35/EC of 26 May 2003 and Directive 2009/31/EC of 23 April 2009, now codified in Directive 2011/92/EU of 13 December 2011 and amended in Directive 2014/52/EU of 16 April 2014, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given. The EIA Directive was first transposed into Irish law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349 of 1989) which amended the Local Government (Planning and Development) Act, 1963 (and other legislation) to provide for environmental impact assessment.

Habitats and Birds Directive

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Union. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An 'appropriate assessment' is an evaluation of the potential impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

National Legislation

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2018 and the Floral (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that 'Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made'.





In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans. D. 78/03

PLANNING POLICY

National Policy

Nationally, the Government's commitment to sustainable development is set out in a number of documents, including the National Planning Framework 2040. The strategic policies relevant to x biodiversity within the framework are summarised in the table below:

Policy	Description
National Policy Objective 59	Enhance the conservation status and improve the management of protected areas and protected species by:
	 Implementing relevant EU Directives to protect Ireland's environment and wildlife; Integrating policies and objectives for the protection and restoration of biodiversity in statutory development plans; Developing and utilising licensing and consent systems to facilitate sustainable activities within Natura 2000 sites; Continued research, survey programmes and monitoring of habitats and species.

Local Policy : Kildare County Development Plan 2023-2029

Relevant planning policies and objectives in respect of biodiversity and natural heritage set out in Volume 1 of the Kildare County Development Plan 2023-2029, in Chapter 6 (Infrastructure and Environmental Services) and Chapter 12 (Biodiversity and Green Infrastructure) are summarized below.

Policy	Description
Chapter 6 - IN O23	Require new developments to reduce the generation of storm water runoff and ensure all storm water generated is disposed of on-site OR attenuated and treated prior to discharge to an approved water system, with consideration for the following:
	• The infiltration into the ground through the provision of porous pavement such as permeable paving, swales, and detention basins.
	• The holding of water in storage areas through the construction of green roofs, rainwater harvesting, detention basins, ponds, and wetlands.
	The slow-down in the movement of water.
Chapter 12 BI P1 (Policy)	Integrate in the development management process the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate
BI O1 (Objectives)	Require, as part of the Development Management Process, the preparation of Ecological Impact Assessments that adequately assess the biodiversity resource within proposed development sites, to avoid habitat loss and fragmentation and to integrate this biodiversity resource into the design and layout of new development and to increase biodiversity within the proposed development.



Policy	Description	PK
BI O2	Encourage and promote the retention and creatic between built up urban areas and industrial scale habitat value including areas that are not subject	on of green corridors within and e developments to protect wildlife to public access.
BI O3	Actively support the implementation of national biodiversity initiatives such as the All-Ireland Pollinator Plan 2021-2026	
BI O4	Promote increased public participation in biodiversity conservation by supporting and encouraging community-led initiatives such as native tree planting, the removal of invasive species and the continued preparation of Local Biodiversity Actions Plans for settlements in County Kildare	
BI O5	Avoid development that would adversely affect the site located within and immediately adjacent to favourable conservation status of habitats and pre- listed under the Birds Directive, the Wildlife Acts is support the conservation and enhancement of National sites that may be proposed for designal Plan and protect the Natura 2000 network from a likely to have a significant effect on the coherence Site.	he integrity of any Natura 2000 to the county and promote otected species including those and the Habitats Directive, to atura 2000 Sites including any ation during the period of this any plans and projects that are e or integrity of a Natura 2000
BI O6	Ensure an Appropriate Assessment, in accordance with Article 6(3) and Article 6(4) of the Habitats Directive and with DEHLG guidance (2009), is carried out in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site to determine the likelihood of the plan or project having a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects and to ensure that projects which may give rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites will not be permitted (either individually or in combination with other plans or projects) unless for reasons of overriding public interest.	
BI O7	Support the establishment of conservation measures and the preparation and implementation of management plans for the conservation of Natura 2000 sites is NPWS, as required by Article 6(1) of the Habitats Directive.12.6.2Natural Heritage Areas (NHAs) and Nature Reserves Under the Wildlife (Amendment) Act 2000, Natural Heritage Areas (NHAs) are designated to conserve species and habitats of national importance and sites of geological interest. The designation of these sites is the responsibility of the National Parks and Wildlife Division of the Department of Housing, Local Government and Heritage and is an ongoing process as boundaries are revised and adjusted and new sites added. A nature reserve is an area of importance to wildlife, which is protected under Ministerial Order under Irish Legislation. Biogenetic Reserves, as designated by the Counci of Europe, are protected areas characterised by one or more typical, unique, endangered or rare habitats, biocenoses or ecosystems.	
BI O9	Avoid development that would adversely affect the site and promote favourable conservation status including those listed under the Birds Directive, the Directive, to support the conservation and enhan- including any additional sites that may be propose period of this Plan and protect the Natura 2000 n projects that are likely to have a significant effect a Natura 2000 Site.	he integrity of any Natura 2000 of habitats and protected species he Wildlife Acts and the Habitats cement of Natura 2000 Sites ed for designation during the etwork from any plans and on the coherence or integrity of

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Policy	Description	P.K.
BI O18	Require all applications for new developmen enhance the most important ecological featu these into the overall open space network, k provide links to the wider Green Infrastructur design process and by making 394 provision provision of swift boxes or towers, bat roost s roofs, etc.).	ts to identify, protect and sensitively res and habitats, and incorporate eeping free from development and to re network as an essential part of the for local biodiversity (e.g. through sites, hedgehog highways2, green
BI O20	Conserve and protect habitats and species listed in the Annexes of the EU Habitats Directive (92143/EEC) (as amended), the Birds Directive (20091147/EC), Directive Annex 2, the Wildlife Acts 1976 to 2000, The Wildlife Acts 1976 (as amended) and the Flora Protection Order No 94 of 1999.	
BI O22	Identify and protect areas of high nature conservation value (including but not limited to SAC/SPA/pNHA) and support the landscape features which act as ecological corridors/networks and stepping-stones, such as river corridors, hedgerows, and road verges so as to minimise the loss of habitats and features of the wider countryside which are of major importance for wild fauna and flora in accordance with Article 10 of the Habitats Directive.	
BI O24	Identify biodiversity corridors, watercourses, indigenous hedgerows, or marginal habitat, I order to appropriately landscape same in ord survival, abundance, productivity, genetic div	significant as well as native and between County Biodiversity Sites in der to ensure population recovery and versity and species richness.
BI O26	Prevent, in the first instance, the removal of hedgerows to facilitate development. Where their removal is unavoidable, same must be clearly and satisfactorily demonstrated to the Planning Authority. In any event, removal shall be kept to an absolute minimum and there shall be a requirement for mitigation planting comprising a hedge of similar length and species composition to the original, established as close as is practicable to the original and where possible linking to existing adjacent hedges. Ideally, native plants of a local provenance and origin should be used for any such planting. Removal of hedgerows and trees prior to submitting a planning application will be viewed negatively by the planning authority and may result in an outright refusal.	
BI O27	Require the retention and appropriate manages infill or suitably sized transplanted planting we uninterrupted green infrastructure network.	gement of hedgerows and to require here possible in order to ensure an
BI O28	Promote the integration of boundary hedges into development design so as to avoid "trap of houses within the development layout. En trees and hedgerows as part of new develop own landscaping works ideally using native p	within and along development sites ped hedges" located to the boundary courage the planting of woodlands, ments and as part of the Council's plants of local provenance and origin
BI O31	Restrict the cutting of hedges during the bird-nesting season (1st March until 31st August), except in certain legally defined circumstances, in accordance with the provisions of the Wildlife (Amendment) Act 2000.	
BI O38	Require the preparation and submission of a (EcIA) including, but not limited to, bat and o river or canal corridors.	n Ecological Impact Assessment tter surveys for developments along
BI O76	Promote and support the development of Su (SuDS) such as integrated constructed wetla	stainable Urban Drainage Systems ands, permeable surfaces, filter strips,



Policy	Description
	ponds, swales and basins at a site, district and county level and to maximise the amenity and bio-diversity value of these systems.
BI P6	Recognise the important contribution trees and hedgerows make to the county biodiversity resource climate mitigation, resilience and adaptation.
BI P13	Recognise the importance of Urban Green Infrastructure in addressing a broad range of urban challenges, such as connecting people with nature, adapting to climate change, supporting the green economy and improving social cohesion and to seek to protect and enhance this resource, particularly existing semi- natural areas, or habitats (such as hedgerows, canals, rivers, ponds).
BI A14	Carry out a survey of trees within the main urban settlements as part of the preparation of Habitat Mapping for local area plans and to include policies for the protection of trees and hedgerows within local area plans where appropriate.





APPENDIX 5-B Site Photographs

Kilsaran Concrete Unlimited Company Halverstown, Kilcullen, Co. Kildare Increased Intake and Extension of Permission for Existing SRF



Photograph 5-1 : GS1 Dry calcareous and neutral grassland

Photograph 5-3 : GS2 Dry meadows and grassy verges





Photograph 5-4 : GS4 Wet grassland with colonising willow scrub



Photograph 5-5 : WS1 Scrub





Photograph 5-6 : WL2 Treeline



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Photograph 5-7 : ED2 Spoil and bare ground with areas of ED3 recolonising bare ground



Photograph 5-9 : FW4 Wet Ditch



Photograph 5-11 : TN3 Wall Cotoneaster Located at ITM 682562 705773



Photograph 5-8 : ED2 Spoil and bare ground with areas of ED3 recolonising bare ground



Photograph 5-10 : Buildings



Photograph 5-12 : TN4 Potential Badger Footprints Located at ITM 682455 705406







APPENDIX 5-C Preliminary Roost Assessment





TN5: TREE WITH MODERATE BAT ROOSTING POTENTIAL



Assessment Categorisation

Moderate potential for roosting bats

Description

TN5: comprised standing deadwood located at approximate ITM Co-ordinates 682244 705713.

Potential Roosting Features (PRFs)

A potential shallow tear-out provided a small access point to the upper stem. The PRF was located on the southern aspect, close to the top of the tree. Tear-outs can often provide access to a potential void-space within the main stem23. It is unknown whether this leads into a further void. This may provide a PRF for crevice-dwelling bats.

Tn5 was located along a treeline, potentially providing suitable commuting habitat for bats, and increasing the likelihood of its uptake for roosting. Suitable foraging habitats were located close to tn5 through scrub, agriculture land and treelines.

Evaluation

A cavity within the stem is likely to provide a PRF for crevice-dwelling or void-dwelling bats. Considering the relatively small diameter of the stem at this point, it is considered that this prf may support low numbers of bats; especially bats that are known to use trees. Bat species that are attributed to tear-out PRFs include daubenton's bat myotis daubentonii, natterer's bat myotis nattereri, leisler's bat nyctalus leisleri, nathusius' pipistrelle pipistrellus nathusii, common pipistrelle pipistrellus pipistrellus, soprano pipistrelle pipistrells pygmaeus, and brown long-eared bats plecotus auritus.

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TN6: TREE WITH BAT ROOSTING POTENTIAL



Assessment

Moderate potential for roosting bats.

Description

TN6 comprised a semi-mature crab apple located at approximate ITM coordinates 682278 705747.

Potential Roosting Features (PRFs)

The stem was damaged, and an access point led into a potential void within the stem. This PRF was visible from the south-east aspect of the tree and was located approximately 1.5m from the ground.

Evaluation

A cavity within the stem is likely to provide a PRF for crevice-dwelling or void-dwelling bats. Considering the relatively small diameter of the stem at this point, it is considered that this PRF may support low numbers of bats; especially bats that are known to use trees. Bat species that are attributed to tear-out PRFs include Daubenton's bat, Natterer's bat, Leisler's bat, Nathusius' pipistrelle, common pipistrelle, soprano pipistrelle, and brown long-eared bats.





²³ Bat Tree habitat Key (BTHK). (2020). Bat tree habitat key – 4th Edition. AEcol, Bridgewater.

BUILDINGS





Assessment

Negligible potential for roosting bats

Description

All buildings located on the application site lacked PRFs or potential access points that may lead into unused PRFs. Therefore, all buildings on the application site have been assessed as having negligible potential for roosting bats.

Photograph 5-16 Building with negligible bat roosting potential



