



ARCUS

NEILSTON GREENER GRID PARK

LAND OFF GLENIFFER ROAD, PAISLEY

APPENDIX 3: PRELIMINARY ECOLOGICAL APPRAISAL

JANUARY 2021



Statkraft



Prepared By:

Arcus Consultancy Services

7th Floor
144 West George Street
Glasgow
G2 2HG

T +44 (0)141 221 9997 | **E** info@arcusconsulting.co.uk
w www.arcusconsulting.co.uk

Registered in England & Wales No. 5644976

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Site Description	1
1.2	The Development	1
2	METHODS	2
2.1	Desk Study.....	2
2.2	Extended Phase 1 Habitat Survey	2
2.3	Preliminary Bat Roost Assessment	2
2.4	Great Crested Newt Surveys	2
2.5	Limitations and Assumptions	3
3	RESULTS	3
3.1	Desk Study.....	3
3.2	Extended Phase 1 Habitat Survey	6
3.3	Protected Species	7
4	INTERPRETATION AND RECOMMENDATIONS	9
4.1	Designated Sites.....	9
4.2	Habitats	9
4.3	Badgers.....	9
4.4	Bats.....	10
4.5	Herptiles (Amphibians and Reptiles)	10
4.6	Birds	10
5	CONCLUSION.....	11
	APPENDIX A: FIGURES.....	12
	APPENDIX B: PHOTOGRAPHS	13
	APPENDIX C: HABITAT SUITABILITY INDEX (HSI) RESULTS.....	14

1 INTRODUCTION

Arcus Consulting Ltd was commissioned by Statkraft Ltd to undertake a Preliminary Ecological Appraisal (PEA) of land to the south east of Neilston Substation, Glasgow (approximate National Grid Reference NS 45133 59960) (henceforth referred to as the 'Site') and shown in Figure 1 (Appendix A).

The PEA presented within this report was carried out with reference to with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal¹.

This report details ecological baseline conditions and potential ecological impacts from the Development, taking into account relevant planning policy and legislation. Further surveys and mitigation have been described, where applicable, in order to provide additional information for assessing impacts and to inform recommendations to avoid or reduce potential impacts.

1.1 Site Description

This Site comprises an area of approximately 14.06 hectares (ha) and is located on land off Gleniffer Road, Renfrewshire opposite the existing Neilston Substation. Seargentlaw Farm is located approximately 400 m to the south. The Site is located approximately 2 kilometres (km) southeast of Johnstone and 3.2 km northwest of Neilston. The topography of the Site is generally flat with a slight gradient incline from the northwest to the southeast of the Site.

The Site is located in an area predominantly considered agricultural land open fields. The exception to this is the aforementioned Neilston Substation.

Photographs of habitats are presented in Appendix B.

1.2 The Development

The Applicant seeks planning permission for the construction and operation of an energy management facility (the Development) to support the flexible operation of the National Grid and decarbonisation of the electricity supply e.g. by balancing the supply and demand of energy.

The Development is intended to provide services supporting the flexible operation of the National Grid and decarbonisation of electricity supply e.g. by balancing electricity supply and demand. The Development will import and export electricity but will not generate any additional electricity nor have any onsite emissions of carbon dioxide.

The Development, as illustrated on the accompanying Proposed Site Layout Plan, is anticipated to include the following components:

- Battery storage units;
- Energy management building containing energy management system, coolers, and e-houses;
- Electrical infrastructure including inverters, transformers, grid connection, switchgear and underground cabling;
- LV switch house;
- Comms house;
- Fire wall;
- New site entrance;
- On-site access track and parking area;

¹ CIEEM (2017), Guidelines for Preliminary Ecological Appraisal, 2nd Edition. Available [online] https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Dec2017.pdf

- Security perimeter fencing; and
- Landscaping and planting.

The above is shown in Figure 1 (Appendix A) within the Proposed Site Layout Plan.

2 METHODS

2.1 Desk Study

A Desk Study was undertaken to provide ecological baseline conditions for the land within the Site and the surrounding environment. Records of statutory designated sites within 2 kilometres (km) of the Site (hereafter referred to as the 'Desk Study Area') were searched for using Scottish Natural Heritage (SNH) Sitelink². In addition, recent records (within the past 20 years) of protected and invasive species were obtained from publicly available resources, such as the National Biodiversity Network (NBN Atlas)³.

2.2 Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey (hereby referred to as 'the Survey') was conducted on 4th September 2020 by consultant ecologist Laura Spence ACIEEM. The Survey included all land within the Site and a 250 metre (m) buffer where access allowed. The aim of this survey was to classify the habitats present within and adjacent to the Site, and to assess the potential for the Site to support protected and/or notable species. The survey was carried out in accordance with the Joint Nature Conservation committee (JNCC) Phase 1 methodology⁴. Recommendations for further survey and mitigation have been provided.

2.3 Preliminary Bat Roost Assessment

During the Survey, a preliminary (ground level) assessment of the potential of on-site features to support roosting bats and/or provide suitable commuting or foraging habitat was conducted. The bat assessment work and recommendations followed guidelines produced by the Bat Conservation Trust (BCT)⁵. This initial bat assessment informs the need for further targeted survey by assessing the potential effects of the Development on bats. Features subject to assessment included the adjacent habitats, trees and built structures. Should evidence of bats or potential roost features (PRFs) be recorded, further surveys may be required.

2.4 Great Crested Newt Surveys

2.4.1 Habitat Suitability Index (HSI) Assessment

During the Survey, a Habitat Suitability Index (HSI) assessment was carried out on the waterbody adjacent to Site, following best practice⁶. The HSI considers ten defined pond features and characteristics, to give a standardised measure and score of habitat suitability for great crested newt (GCN) (*Triturus cristatus*). An HSI score (see Table 2.1) is a numerical index between 0 and 1, with values close to 0 indicating unsuitable habitat and 1 representing optimal habitat. In general, ponds with a higher HSI score are more likely to support GCN than those with lower scores, therefore the assessment is used to determine if further survey are required with ponds with poor score, typically scoped out of requiring further surveys.

² SNH. SNH Sitelink. Available online at <https://gateway.snh.gov.uk/sitelink/>. [Accessed August 2020].

³ National Biodiversity Network. NBN Atlas. Available online at <https://nbnatlas.org/>. [Accessed August 2020].

⁴ JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, JNCC, Peterborough, ISBN 0 86139 636 7.

⁵ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd ed.). The Bat Conservation Trust, London.

⁶ ARG UK Advice Note 5 (2010) Great Crested Newt Habitat Suitability Index

The HSI scores are inserted into a table to calculate a score for the pond (See HSI results in Appendix C), with pond suitability for GCN assessed on the following scale:

Table 2.1 HSI Categories

HSI score	Pond suitability
< 0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> 0.8	Excellent

2.5 Limitations and Assumptions

There are no limitations associated with the Survey work. The Survey was undertaken during the optimal survey season (April-September)⁷ and all habitats were identified fully. The surveyor was able to access all areas within the Site boundary.

3 RESULTS

3.1 Desk Study

3.1.1 Designated Sites

There were three statutory designated sites recorded within 5 km of the Site; Loch Libo Site of Scientific Interest (SSSI), Boylestone Quarry SSSI and Durrockstone Park Local Nature Reserve (LNR).

Table 3.1: Statutory Designated Sites and their Proximity to the Site.

Site	Status	Minimum Proximity (km) to Site	Description/Reason for Designation
Statutory designated sites			
Boylestone Quarry	SSSI	3.6 km east	Designated for interesting mineralogy of Scotland; contains three thick lava flows of the Clyde Plateau that exhibit varying stages of magnetic evolution and consequently differ in the minerals they contain.

⁷ Scottish Natural Heritage: Natures Calendar. Available online at: <https://www.nature.scot/sites/default/files/2018-01/Natures%20Calendar.pdf>

Site	Status	Minimum Proximity (km) to Site	Description/Reason for Designation
Loch Libo	SSSI	3.8 km south-west	Eutrophic loch with aquatic and emergent plant communities. It is the best example of a eutrophic loch in East Renfrewshire and is relatively undisturbed. Nationally Scarce cowbane (<i>Cicuta virosa</i>) is present as are locally uncommon species such as greater tussock sedge, (<i>Carex paniculata</i>) and lesser pond sedge (<i>Carex acutiformis</i>). The nationally uncommon species lesser tussock sedge (<i>Carex diandra</i>), water sedge (<i>Carex aquatilis</i>), slender tufted sedge (<i>Carex acuta</i>) and water parsnip (<i>Berula erecta</i>) are also present within the site.
Durrockstock Park	LNR	1.5 km north-east	A former industrial area, now of value for nature conservation within Paisley. Habitats present include marshland and standing water and mature Scots pine (<i>Pinus sylvestris</i>) plantation which supports a variety of birds, amphibians and invertebrates.

3.1.2 Protected and/or Notable Species

The Desk Study returned species records within 2 km of the Site, which included those protected under UK & European legislation⁸ birds listed as of Conservation Concern⁹ (BoCC), species listed on the Scottish Biodiversity List (SBL¹⁰), and species listed on the Local Biodiversity Action Plan (LBAP) for Renfrewshire¹¹. A summary of recent records (last 20 years) is detailed in Table 3.2.

Table 3.2: Relevant protected and notable species within 2 km of the Site

Taxonomic group	Species		Conservation status	Most recent record within Desk Study Area
	Common name	Latin name		
Birds	Barn Owl	<i>Tyto alba</i>	WCA Sch1.1 Error! Bookmark not defined. ; SBL	Mar-13

⁸ UK Government (1981) Wildlife and Countryside Act 1981 – Chapter 69. Available online at: http://jncc.defra.gov.uk/PDF/waca1981_schedule1.pdf [accessed August 2020]

⁹ Eaton, M.A., Aebischer, N.J., Brown, A., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A., & Gregory, R.D. (2015). *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. *British Birds*, 108: 708–746.

¹⁰ Scottish Government. (2004). The Nature Conservation (Scotland) Act 2004. Scottish Government, Edinburgh. http://www.legislation.gov.uk/asp/2004/6/pdfs/asp_20040006_en.pdf [accessed August 2020]

¹¹ Renfrewshire Biodiversity Action Plan 2018-2022. Available online at: http://www.renfrewshire.gov.uk/media/6303/Renfrewshire-Biodiversity-Action-Plan-2018-2022/pdf/Biodiversity_Action_Plan_FINAL.pdf?m=1527000856037

Barnacle Goose	<i>Branta leucopsis</i>	BoCC Amber; Ann1; SBL	Mar-19
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber; SBL	May-20
Brambling	<i>Fringilla montifringilla</i>	WCA Sch1.1; SBL	Mar-19
Bullfinch	<i>Pyrrhula pyrrhula</i>	BoCC Amber; SBL	May-17
Common Crossbill	<i>Loxia curvirostra</i>	WCA Sch1.1	Apr-12
Common Gull	<i>Larus canus</i>	BoCC Amber	May-20
Cuckoo	<i>Cuculus canorus</i>	BoCC Red; SBL	May-20
Dipper	<i>Cinclus cinclus</i>	BoCC Amber	May-17
Dunnock	<i>Prunella modularis</i>	BoCC Amber; SBL	Mar-20
Hen Harrier	<i>Circus cyaneus</i>	BoCC Red; WCA Sch1.1 & 1A; Ann1 ⁸ ; SBL; LBAP	Feb-09
House Martin	<i>Delichon urbicum</i>	BoCC Amber	Nov-18
House sparrow	<i>Passer domesticus</i>	BoCC Red; SBL	Jan-18
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber; SBL	Apr-20
Lesser Black-backed Gull	<i>Larus fuscus</i>	BoCC Amber	May-20
Lesser Redpoll	<i>Acanthis cabaret</i>	BoCC Red; SBL	Mar-19
Meadow Pipit	<i>Anthus pratensis</i>	BoCC Amber	May-19
Peregrine	<i>Falco peregrinus</i>	WCA Sch1.1; Ann1; SBL	Sep-18
Pink-footed Goose	<i>Anser brachyrhynchus</i>	BoCC Amber	Oct-17
Reed Bunting	<i>Emberiza schoeniclus</i>	BoCC Amber; SBL	May-20
Short-eared Owl	<i>Asio flammeus</i>	BoCC Amber; Ann1; SBL	Mar-16
Siskin	<i>Spinus spinus</i>	SBL	May-20
Skylark	<i>Alauda arvensis</i>	BoCC Red; SBL	May-20
Snipe	<i>Gallinago gallinago</i>	BoCC Amber	Nov-13
Starling	<i>Sturnus vulgaris</i>	BoCC Red; SBL	May-20
Tawny Owl	<i>Strix aluco</i>	BoCC Amber	Jun-13

	Willow Warbler	<i>Phylloscopus sibilatrix</i>	BoCC Amber	May-20
	Woodcock	<i>Scolopax rusticola</i>	BoCC Red; SBL	Feb-16
Amphibians	Common toad	<i>Bufo bufo</i>	BAP; SBL; WCA	April 2010
Terrestrial Mammals	Badger	<i>Meles meles</i>	Protection of Badgers Act ¹²	2018

3.2 Extended Phase 1 Habitat Survey

3.2.1 Habitats within the Site

3.2.1.1 A2.1 Scrub – Dense/Continuous

Within the west of the Site boundary an area of grey willow (*Salix cinerea*) scrub was present (Appendix B, Photograph 3).

3.2.1.2 B1.2 – Acid Grassland - semi-improved

The grassland field comprising the west of the Site was semi-improved grassland, likely of acid grassland origin. To the north of this field the habitat graded into marshy grassland with crossover of species present between these habitats.

Species present included frequent perennial rye-grass (*Lolium perenne*), occasional Yorkshire fog (*Holcus lanatus*), frequent tufted hair-grass (*Deschampsia cespitosa*), frequent soft rush (*Juncus effuses*), frequent ragwort (*Senecio jacobaea*) and occasional creeping buttercup (*Ranunculus repens*).

3.2.1.3 B4 – Improved Grassland

The grassland field comprising the east of the Site was improved grassland, at the time of the Survey cattle were grazing within this area. Species present indicated that the grassland was nutrient enriched, with perennial rye-grass the dominant species. Additional grass species present included frequent tufted hair-grass, frequent Yorkshire fog, rare cocksfoot (*Dactylis glomerata*), and rare wavy hair-grass. Soft rush was found frequently, with hard rush (*Juncus inflexus*) found rarely in the damper sections of this habitat.

Additional species present included abundant white clover (*Trifolium repens*), frequent creeping buttercup, occasional dandelion (*Taraxacum officinale*), occasional creeping thistle (*Cirsium arvense*), occasional broad-leaved dock (*Rumex obtusifolius*), occasional nettle (*Urtica dioica*), rare daisy *Bellis perennis* and rare ragwort. Along the access track there was also rare hawkbit (*Leodonton sp.*) observed, with yarrow (*Achillea millefolium*) found in sections where the ground was disturbed.

3.2.1.4 B5 – Marshy Grassland

Within the field located in the west of the Site, the north of the semi-improved grassland habitat present graded into an area of marshy grassland. The abundant species was soft rush, with frequent tufted hair-grass, frequent Yorkshire fog, occasional ground elder (*Aegopodium podagraria*), occasional horsetail (*Equisetum sp.*), occasional common knapweed (*Centaurea nigra*) and occasional devil's-bit scabious (*Succisa pratensis*).

¹² Available online at: https://www.legislation.gov.uk/ukpga/1992/51/pdfs/ukpga_19920051_en.pdf (Accessed August 2020)

3.2.1.5 J3.6 – Buildings

There was one built structure located within the Site boundary, within the centre of the Site on the border of the two fields comprising the Site. The structure was a small brick building which had low ecological significance (Appendix A, Photograph 2). At the time of the Survey the base of the structure was flooded due to recent, heavy rain.

3.2.2 Habitats within the Survey Area (250 m buffer of the Site)

3.2.2.1 A1.2 Coniferous Woodland – Plantation

Adjacent to the eastern boundary of the Site was a small coniferous plantation with Sitka spruce (*Picea sitchensis*) the dominant canopy species. In the understory there were rare broadleaved trees species, with alder (*Alnus glutinosa*), sycamore (*Acer pseudoplatanus*) and ash (*Sorbus aucuparia*) present.

Due to the intense shade due to the closed canopy, there was very little ground flora present. Sparse grasses including tufted hair-grass were present towards the edge of the plantation.

3.2.2.2 A2.2 Scrub – Scattered

Adjacent to the western boundary of the Site an area of scattered scrub with frequent immature tree species including hawthorn (*Crataegus monogyna*), alder and rowan was recorded. The scattered scrub overlay semi-improved grassland with an acidic influence. Species present at ground level included abundant tufted hair-grass, occasional wavy hair-grass (*Deschampsia flexuosa*), occasional soft rush, and tormentil (*Potentilla erecta*) found rarely.

Additionally, there was scattered grey willow scrub along the northern boundary of the Site on the verge of the B775.

3.2.2.3 C3.1 – Tall Ruderal

Around the masts positioned on the southern boundary of the Site were small areas of tall ruderal habitat, dominated by rosebay willowherb (*Chamerion angustifolium*). In addition, there was an area to the north of the masts which was dominated by dense common nettle.

3.2.2.4 G1 – Standing Water

A small area of standing water was present 120 m offsite to the south, which was a small, heavily poached pond. No aquatic vegetation was present, but the pond was fringed by grasses, with some emergent vegetation

3.2.2.5 J2.2.5 – Walls

Some drystone walls were present along field boundaries

3.3 Protected Species

3.3.1 Badger

No evidence of badger was found within the Site or within the Survey Area during the survey; however, there was suitable foraging and sheltering habitat for this species within and adjacent to the Survey Area. The coniferous woodland present was suitable for sett creation, whilst the grazed pasture provided suitable foraging opportunities for this species. Furthermore, recent records of badger were identified within 2 km of the Site during the Desk Study. Therefore, the presence of badger within the Site cannot be ruled out.

3.3.2 Bats

3.3.2.1 Roosts

Although an area of scrub was located within the Site boundary, the trees present were not suitable for roosting bats as no PRFs (e.g. rot holes, split limbs, hazard beams) were identified within them. The small built structure within the Site had limited potential for bats, as the structure was open and therefore draughty and damp. While there was superficial damage to the brickwork of the structure, there were no large cracks or gaps evident which could support roosting bats. There was also evidence that the structure is disturbed by livestock, with poaching around and within the structure.

The farm buildings 400 m offsite to the south contained features that were suitable for roosting bats. Although most of the buildings were modern corrugated iron barns, with negligible roosting features, one building, the farmhouse, had a slate roof with missing slates and gaps which could support roosting bats. Due to the distance and nature of the proposed works from these buildings, they will not be affected by the proposed Development, and therefore, it was not necessary to fully inspect these buildings for their bat suitability.

3.3.2.2 Habitats

The willow scrub within the Site and features immediately offsite such as the coniferous woodland and broadleaved scrub provided potential to support foraging bats, and were connected to suitable habitats in the wider landscape. However, the Development is not scheduled to impact any such habitat features and the Site itself was comprised in majority by grazed pasture habitat of low ecological value. On this basis the Site was classed as having a 'negligible' suitability for foraging, commuting and roosting bats.

3.3.3 Herptiles (Amphibians and Reptiles)

No records of GCN were returned by the Desk Study and no ponds are present within the Site; however, a pond was recorded approximately 120 m outwith the Site to the south. The pond showed no emergent vegetation, and was of poor water quality, with water heavily turbid due to cattle poaching. This pond was assessed as 'poor' in the habitat suitability index assessment (full results shown in Appendix C); the suitability of this pond for GCN is negligible and therefore no further survey for GCN is recommended.

The marshy grassland within the Site is considered suitable to support common amphibian species and the desk study returned records of common toad *Bufo bufo*. Furthermore, drystone walls within the Site may be used as hibernacula by this species.

Much of the grassland habitats on Site were heavily grazed by cattle and had a low sward height, offering little shelter or foraging opportunities for common reptile species. However, localised areas of longer, rough grassland within the semi-improved field to the west and the willow scrub habitat, also present in the west of the Site, may support small relict populations of common lizard. Drystone walls offer potential hibernacula for common lizard. However, the Desk Study returned no records of reptiles within 2 km of the Site, and considering the habitats present, it is thought to be unlikely that reptiles will be present on Site.

3.3.4 Birds

Habitats present within and adjacent to the Site are suitable range of common nesting bird species. There was potential for ground nesting species such as skylark (*Alauda arvensis*) and meadow pipit (*Anthus pratensis*), both recorded within the Desk Study, to utilise grassland habitats within the Site. Scrub habitat within the west of the Site offered suitable trees to support nesting birds. In addition, hedgerows and trees bordering the Site,

including the coniferous plantation immediately east of the Site, provided suitable habitat for nesting birds.

4 INTERPRETATION AND RECOMMENDATIONS

The Site has suitable habitats for protected species and these habitats have the potential to be directly and indirectly impacted by the Development. Due to the low ecological value of the Site, and lack of evidence of protected species, no further surveys are recommended; however, recommendations mitigation and enhancement have been proposed in the following sections.

4.1 Designated Sites

Boylestone Quarry SSSI is designated for its geological importance and therefore is not discussed further in this report.

Loch Libo is situated 3.8 km from the Site, and there is no hydrological connectivity to the Site, therefore it will not be impacted by the development.

Durruckstock Park LNR is situated 1.5 km from the Site and is significantly separated for there not to be any impact on the designated features by the Development.

As no designated site will be impacted by the development, no recommendations are required.

4.2 Habitats

Habitats present on Site are of a low ecological and conservation value, and therefore no further botanical survey is recommended.

Although the pond is classed as a UKBAP Priority Habitat, it is of reduced ecological value as it is degraded. The pond is heavily poached, small in size and lacking in vegetation, owing to the distance of the pond from the Site, there will be a negligible impact upon it.

Vegetation clearance should be minimised wherever possible, to avoid net loss of biodiversity. If working in close proximity to the woodland adjacent to the Site, root protection areas (RPAs) will need to be avoided. Should works be taking place close to woodland, the use of exclusion buffer fencing (e.g. heras fencing) should be considered following the advice of a qualified arboriculturist.

No non-native invasive species were recorded within or adjacent to the Site.

4.3 Badgers

Although no evidence of badger was recorded on the Site, suitable habitats for foraging exist on Site, therefore there is the potential for badgers and other terrestrial mammals to be active in the area. Adjacent woodland also offers suitable habitat for sett creation. In addition, the records search returned 4 records of badger within 2 km of the Site. In order to prevent harm, the following controls should be implemented during the works, if possible:

- As suitable habitat for badger exists within the Site, pre-construction badger surveys should be carried out by a suitably qualified ecologist;
- All excavations should be covered overnight to prevent animals falling into them. Excavations should be inspected daily for the presence of animals before recommencing work on them;
- Any deep excavations that are to be left open overnight should include a means of escape for any animals that may fall in;
- Where possible, works should be limited to the hours from dawn to one hour before sunset;

- The creation of large stock piles of earth should be avoided as these may be attractive for badgers and other animals;
- Store building materials above ground on pallets; and
- Contact an ecologist for advice if new animal burrows are identified.

4.4 Bats

4.4.1 Buildings, trees and habitats

There were no trees or buildings suitable for roosting within the Site. Additionally, no records of bats within 2 km of the Site were returned during the desk study; therefore, no further surveys are considered necessary.

Habitats within the wider Survey Area, e.g. the plantation woodland bordering the Site to the east, were considered suitable for roosting bats but as these habitats are going to be unaffected by the proposed Development, no further surveys are required.

Ecological net gain could be achieved by providing bat boxes within the structure on Site, to create roosting features. Two Schwegler 2F type boxes could be installed within the structure, improving the suitability of the Site for roosting bats.

4.4.2 Lighting

The effects of lighting on plants and animals are difficult to assess but it is known that lighting can adversely affect invertebrates and bats (as well as other species). The Site experiences limited lighting from the adjacent sub-station. Any new lighting should be designed in line with good practice¹³, such as minimising light spill and directing it away from boundaries and retained habitats, such as buildings, scrub and adjacent hedgerows.

4.5 Herptiles (Amphibians and Reptiles)

No waterbodies were present within the Site and the pond located south of the Site was assessed as having a 'poor' HSI score, therefore it is highly unlikely that this pond will support GCN; however, as it has the potential to support common frog and toad, it is recommended that this feature is retained.

Further surveys are not recommended, however, as amphibians and reptiles may be present within the site mitigation is required. The strimming of vegetation or removal of low-level vegetation during the reptile active season (March to October) should be carried out in phases and towards retained habitat. The initial phase should involve cutting the vegetation to a height of 150 mm and then the second phase down to ground level. This method allows any reptiles present to move out of the area ahead of works. If any reptiles or amphibians are encountered during works, these should be moved to a suitable location outwith the site boundary following the guidance of a suitably experienced ecologist.

4.6 Birds

The Site and adjacent habitats are of low ecological value for bird species; however, these habitats will support a range of common nesting birds. All active birds' nests are legally protected from deliberate or reckless damage and disturbance under the Wildlife and Countryside Act 1981¹⁷. It is therefore recommended that vegetation clearance or tree felling is undertaken outside of the breeding bird season (March - August, inclusive¹⁴) to minimise the risk of legislative non-compliance associated with the Development. Where this is not possible, it is recommended that nesting bird checks are carried out by a suitably

¹³ Bat Conservation Trust (2014), *Artificial Lighting and Wildlife*.

¹⁴ Wild Birds: Surveys and Mitigation a for Development Projects. Available online at <https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects>. [Accessed May 2020]

qualified ecologist immediately prior to any vegetation clearance, tree felling or other noisy operations.

Where it is not possible to retain existing scrub habitat, this should be replanted or, alternatively; native, broadleaved trees should be introduced to the Site to compensate for the loss of nesting habitat. For ground nesting species, appropriate sward height management outwith the Development footprint (i.e. leaving some areas of grassland to grow long) would compensate for any potential loss of nesting habitat within the Development footprint. Bird nest boxes should also be installed to compensate for the loss of potential nesting resources. Following the completion of construction, and on the advice on an ecologist, bird nest boxes should be installed at appropriate locations within the Site and wider Survey Area. All bird boxes should be installed, to provide nesting habitats for a wide range of common passerine bird species.

5 CONCLUSION

The proposed Development will involve building an energy storage facility within an improved grassland field, which is of low ecological value. No valuable habitats are present on Site, and no evidence of protected species was recorded during surveys. Habitats of greater ecological importance are found outwith the Site, which included scrub and woodland that offered greater habitat suitability than those habitats found within the Site. For this reason, with the current proposed works, no further mitigation other than that proposed in Section 4 is anticipated.

APPENDIX A: FIGURES

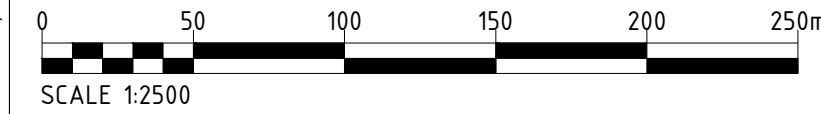
Figure 1: Proposed Site Layout Plan

Figure 2: Phase 1 Survey Results



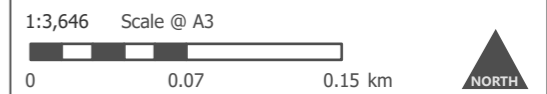
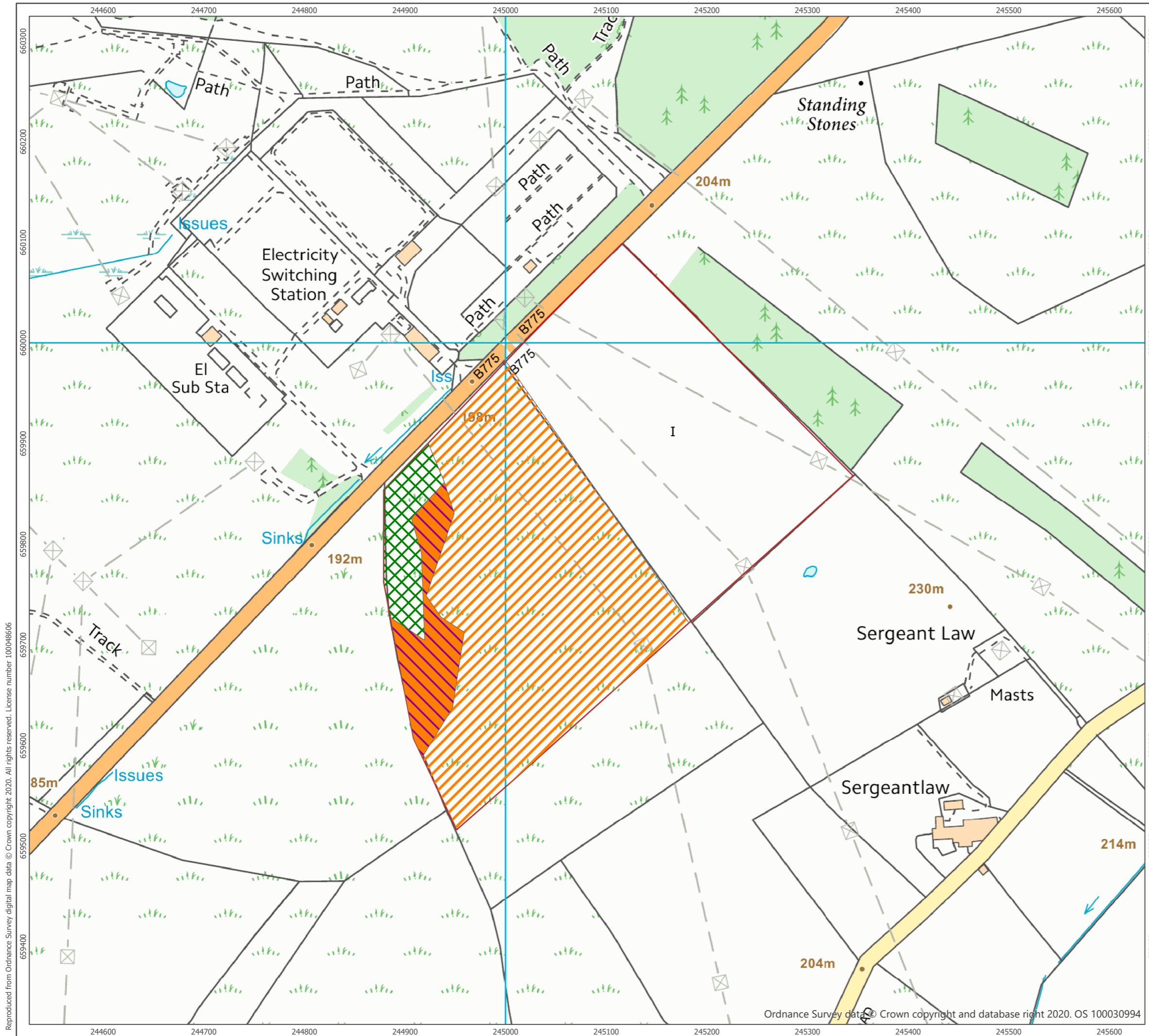
- KEY:**
- SITE BOUNDARY
 - 2.4m HIGH PALISADE FENCE
 - BATTERY (12.9m x 2.44m x 2.59m)
 - INVERTER (6.1m x 2.44m x 2.59m)
 - TRANSFORMERS WITH 7.0M HIGH CONNECTING BUS BARS
 - LV SWITCH HOUSE (7.5m x 9.1m)
 - FIRE WALL (46.7m x 0.5m x 14.0m)
 - BUILDING (20.7m x 36.7m x 10.0m TO ROOF PITCH)
 - E-HOUSE (ENCLOSED IN BUILDING 20.7m x 38.6m x 10.0m TO ROOF PITCH)
 - ENERGY MANAGEMENT SYSTEM (ENCLOSED IN BUILDING 20.7m x 36.7m x 10.0m TO ROOF PITCH)
 - COOLER (11.3m x 2.4m x 2.5m)
 - PROPOSED ROADS
 - SWITCHGEAR CONTAINER (12.2m x 2.44m x 3.0m)
 - EMERGENCY BACK UP DIESEL GENERATOR (6.1m x 3.6m x 2.9m)
 - COMMS HOUSE (12.19m x 2.44m x 2.59m)
 - DISCONNECTOR (2.2m x 4.5m)
 - 6m SECURITY COLUMN
 - 4m HIGH WALL
 - WW2 BUILDING 5m BUFFER

Plot Date : 15 January 2021 11:29:51
File Name P:\PROJECTS\3547 NEILSTON, EAST RENFREWSHIRE\CAD\01-WORKING\01_01-DRAWINGS\3547-DR-P-0002_P10



Project Title NEILSTON BATTERY STORAGE SITE	Drawing Title PROPOSED SITE LAYOUT	Purpose of issue PLANNING	THIS DOCUMENT HAS BEEN PREPARED IN ACCORDANCE WITH THE SCOPE OF ARCUS' APPOINTMENT WITH ITS CLIENT AND IS SUBJECT TO THE TERMS OF THAT APPOINTMENT. ARCUS ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS CLIENT AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED	Arcus Consultancy Services 7th Floor 144 West George Street Glasgow, G2 2HG Tel: +44 (0)141 221 9997 Fax: +44 (0)141 221 5610 www.arcusconsulting.co.uk														
Client 		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Designed KB</td> <td style="width: 25%;">Drawn KB</td> <td style="width: 25%;">Checked TAT</td> <td style="width: 25%;">Approved AM</td> </tr> <tr> <td colspan="2">Arcus Internal Project No. 3547</td> <td colspan="2">Date 13/01/21</td> </tr> <tr> <td colspan="4">Scale @ A3 1:2500</td> </tr> </table>	Designed KB	Drawn KB	Checked TAT	Approved AM	Arcus Internal Project No. 3547		Date 13/01/21		Scale @ A3 1:2500				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Drawing Number 3547-DR-P-0002</td> <td style="width: 30%;">Rev 10</td> </tr> </table>	Drawing Number 3547-DR-P-0002	Rev 10	
Designed KB	Drawn KB	Checked TAT	Approved AM															
Arcus Internal Project No. 3547		Date 13/01/21																
Scale @ A3 1:2500																		
Drawing Number 3547-DR-P-0002	Rev 10																	

- Site Boundary
- Scrub - dense/continuous
- Acid grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland



Produced By: LS	Ref: 3547-REP-001
Checked By: NW	Date: 07/08/2020

Phase 1 Survey Results
Figure 1.

Neilston Substation Battery Storage
Preliminary Ecological Appraisal

APPENDIX B: PHOTOGRAPHS



Photograph 1: Ground Flora of coniferous plantation woodland offsite to the northeast.



Photograph 2: Built structure in the centre of the Site.



Photograph 3: Marshy grassland in foreground, with grey willow scrub in background, within the Site.



Photograph 4: Semi-improved grassland within the Site.



Photograph 5: Improved grassland within the Site.



Photograph 6: Pond outwith the Site to the southeast.

APPENDIX C: HABITAT SUITABILITY INDEX (HSI) RESULTS

HSI Parameter	HS Number	HSI Score
Location	S1	B - 0.5
Pond Area	S2	28m ² 0.1
Pond Drying	S3	Rarely 1.0
Water Quality	S4	Poor 0.33
Shade	S5	0 shade – 1.0
Fowl	S6	Minor 0.67
Fish	S7	Absent – 1.0
Ponds	S8	0.1
Terrestrial	S9	Poor – 0.33
Macrophytes	S10	Zero – 0.3
Total HSI Score		0.40