

Ecological Assessment

Former Southwick Football Club

Old Barn Way, Southwick

Report for PWA Planning

August 2023

Our Ref.: ESBN42 620



Quality Assurance

Author	Sam Ashby BSc, MRes
Reviewed	Fiona Baker BSc, MSc, MCIEEM
Date	August 2023
Version	FINAL

About Us

Bakerwell Limited has two offices, led by directors Fiona Baker and Donna Popplewell. The Directors have collectively 24 years' experience in the ecological consultancy industry, hold relevant degrees, are qualified botanists, and are trained in the use of biodiversity metrics to calculate no net loss/gain.

All staff are members, or training to be members, of the professional body for the environmental industry, the Chartered Institute of Ecology and Environmental Management (CIEEM) and hold Natural England European protected species licences for great crested newts, bats, and dormice. Bakerwell Limited has SMAS Worksafe Health and Safety Accreditation; all staff hold relevant CSCS cards.

Bakerwell Limited is a consultancy specialising in ecological planning advice and surveys. Bakerwell also work in collaboration with trusted associates to provide Landscape Architecture, Arboriculture, and Energy assessments.

Contents

1	Executive Summary	6
2	Introduction	7
3	Aims and Objectives	7
4	Methodology	8
5	Limitations.....	14
6	Results and Discussion	14
7	Planning Context	24
8	Mitigation.....	27
9	Enhancement Recommendations	29
10	Conclusion	30
11	References.....	32
12	Appendices.....	34

Figures:

Figure 1: UKHabs Habitats on Site

Figure 2: Protected Species Survey Results

Figure 3: Mitigation and Enhancements

Appendices:

Appendix 1: Level of Importance

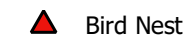
Appendix 2: Relevant Legislation

Appendix 3: Site Photographs

Appendix 4: Plants Identified on Site

Appendix 5: Bird Records Obtained from SxBRC

Appendix 6: Full Reptile Survey Results



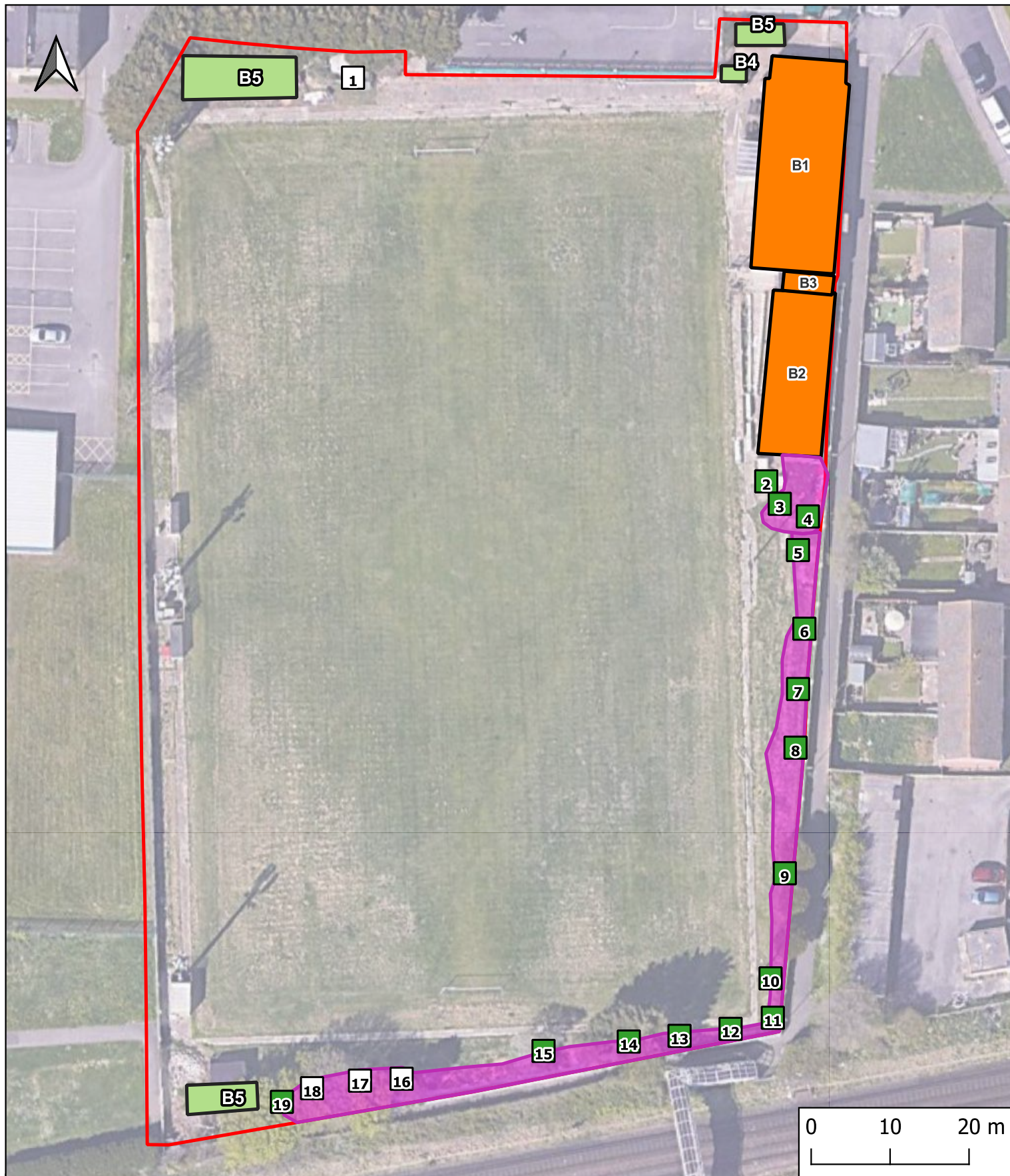


Figure 2: Protected Species Survey Results

Site: Former Southwick FC
 Date: 27/07/2023
 Job: ESN42 620
 Reviewer/Author: SA/FB

bakerwell
 ecological expertise

www.bakerwell.co.uk

Contains Google Satellite data © Crown
 Copyright and database right (2023)

Key

- Site Boundary
- Suitable Reptile Habitat

Reptile Refugia

- Slow Worm Recorded
- No Reptiles Recorded

- Building with Negligible Bat Potential; Not Surveyed
- Bat Buildings Surveyed (No Emergences Recorded)



Figure 3: Mitigation and Enhancements

Site: Former Southwick FC
 Date: 27/07/2023
 Job: ESN42 620
 Reviewer/Author: SA/FB

bakerwell
 ecological expertise

www.bakerwell.co.uk

Contains Google Satellite data © Crown
 Copyright and database right (2023)

Key

- | | | | |
|--|------------------------------|--|---------------------------|
| | Site Boundary | | Invertebrate House |
| | Receptor Option 1 | | Hibernacula |
| | Receptor Option 2 | | Log Pile |
| | Wildflower Meadow Planting | | Hedgehog Highway |
| | Protected Grassland Corridor | | Reptile Exclusion Fencing |
| | Integrated Bird Brick | | Native Tree Planting |
| | Tree-mounted Bird Box | | |

1 Executive Summary

- 1.1 This Ecological Assessment (EA) provides the results of surveys undertaken in 2023 at Former Southwick Football Club, Southwick, West Sussex. A Preliminary Ecological Appraisal (PEA) and subsequent bat and reptile surveys were undertaken in July 2023.
- 1.2 The PEA survey identified potential for roosting bats, reptiles, and breeding birds thus further surveys were instructed.
- 1.3 No signs of roosting bats were observed during the surveys. No bat calls were recorded within, or within the vicinity of, the site. As no roosting bats were recorded no further bat surveys are required.
- 1.4 A peak count of 18 adult slow worms, consistent with a 'Good' or 'High' population, was recorded within the site. The layout will retain boundary habitats wherever possible, allowing slow worms to remain on site. The proposal requires restoration to most habitats, boundaries, and buildings.
- 1.5 Measures to avoid or mitigate harm to slow worms during construction are outlined in Section 8 of this report to be detailed in an Ecological Mitigation Strategy (EMS) as a condition of planning the decision. Precautionary measures have been recommended for nesting birds during construction in Section 8.
- 1.6 Provided the measures detailed within this report are implemented, there will be no significant impact to any protected species as a result of the development.

2 Introduction

- 2.1 Bakerwell Limited were commissioned by PWA Planning, the applicant, to undertake an Ecological Assessment (EA) of land at former Southwick Football Club, Old Barn Way, BN42 4NT (henceforth referred to as the site). The EA comprises an online desk study, a UK Habitat Classification, and assessments of the potential for the habitats on site to support protected species including bat building and tree roost, reptile, and breeding bird assessments.
- 2.2 The PEA identifies the broad habitat types on and in the vicinity of a given site; it aims to identify habitats, species or the potential for species that are protected by European and UK law, are nationally or locally rare or add biodiversity value. The report provides recommendations to ensure that the development is compliant with UK and EU legislation, that any impacts to protected species are mitigated, and biodiversity enhancements are incorporated into the development.
- 2.3 The proposed development site is located in Southwick, West Sussex. The central O.S. grid reference is: TQ 25030 05369. The site is approximately 1.1 ha in area, formed of a sports field, hardstanding, buildings, modified grassland, and ruderals. The site is towards the south of the town, surround by residential land to the north, east, and, beyond a railway line, south. Commercial and recreational grounds lie west of the site. Further afield, a canal extending from the river Adur is south of the site.
- 2.4 The northern site boundary is demarcated by wire fencing. The eastern and western boundaries are formed of brick walls. The southern boundary is defined by a line of trees in front of a wall and wire fencing attached.
- 2.5 The design of the development includes the demolition and reconstruction of the sports facility buildings, reorientating the sports pitch, and laying hardstanding around the pitch.
- 2.6 This report has been compiled to follow the British Standard 42020 Code of Practice for Planning and Development and the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (2018) and Guidelines for Ecological Report Writing (2017).
- 2.7 Recommendations within this report aim to demonstrate the approved development will conserve and enhance biodiversity in accordance with Chapter 15 of National Planning Policy, Section 174.

3 Aims and Objectives

- 3.1 The aim of this assessment is to undertake a desk and field-based ecological assessment of the proposed development site to identify the habitats present, evidence and potential for the presence of protected species on or in the immediate vicinity of the

red line boundary, and any likely direct or indirect effects of the proposed development to the on-site and off-site habitats or potentially present protected species. The objectives of the surveys are to:

- Identify and categorise the broad habitats present on site.
- Identify presence of, or the potential for, protected species.
- Identify any impact to designated ecological sites.
- Provide recommendations for protected species survey, where potential exists.
- Provide outline recommendations for mitigation and enhancements.
- To provide the above in the context of legislation, local planning policy and evaluation of any potential impacts.

4 Methodology

Desk Study

- 4.1 Desk studies are conducted to ascertain which habitats and species are or have been recorded on or within the surrounds of a proposed site. This information highlights areas of local ecological importance and provides an indication of which habitats and species may be expected to be in the vicinity. The desk study also identifies statutory and non-statutory sites that are important for nature conservation within the locality and facilitates an assessment of the potential direct and/or indirect impacts a development may have on these areas.
- 4.2 An in-house online desk study was completed using data acquired from www.MAGIC.gov.uk interactive maps, managed by Natural England, Adur District Council's website, and Google Maps accessed on 30 June 2023. The desk study identified statutory designated sites, impact risk zones (IRZ) of such sites, and granted European Protected Species Mitigation Licences (EPSMLs). This information is used to assess the potential for direct or indirect impacts that may occur as a result of the development. The data sets are updated irregularly by Natural England and therefore may not provide complete and up-to-date records.
- 4.3 Records of designated statutory and non-statutory sites within 2km of the site were obtained from Sussex Biological Records Centre (SxBRC). Records of protected, rare, scarce, and invasive non-native species, in addition to species of conservation concern within 2km, bird records within 1km, and bat records within 5km of the site, were provided. For consistency, only records from observations within the last 10 years are discussed within this report.

UK Habitat Classification

- 4.4 Bakerwell Limited undertook a UK Habitat Classification survey on 21st June 2023. The survey was carried out by Sam Ashby who identified habitats present, following the

standard UK Habitat Classification methodology (Butcher, 2020). The site was surveyed on foot and existing habitats and land uses were recorded on an appropriately scaled map, see Figure 1.

Protected Species Assessment

- 4.5 During the PEA survey conducted on 21st June 2023, Sam Ashby assessed the habitats on site for their potential to support protected species. Any evidence of protected species or areas of ecological interest were plotted as Target Notes on Figure 1. Potential for protected species, invasive species, and any further survey requirements to clarify this, are discussed in the results section of this report.

Bat Roost Assessment

Buildings

- 4.6 Sam Ashby undertook an inspection of four buildings to be demolished for the proposal. The buildings were inspected on 21st June 2023 to assess the potential for, or evidence of, roosting bats
- 4.7 External assessments of the buildings were undertaken in full sunlight from ground level using binoculars and a high-powered torch where necessary to assess potential bat roosting suitability. Potential Roosting Features (PRFs) include lifted roof materials such as tiles, flashing, or felt, and gaps in the building structure, for example under the eaves, in the soffits, roof apex and external beams, and around doors and windows (Table 1). Where present, these features were recorded as Target Notes on Figure 1.
- 4.8 A search for evidence of use by bats was also conducted, looking for individuals or dead animals, droppings, tiny scratches, urine staining, flies, smoothing of surfaces around access points, a bat distinctive smell, and any audible squeaking in warm weather. The roof areas were then assigned a category of potential suitability as a bat roost as shown in Table 2.

Trees

- 4.9 Sam Ashby undertook an inspection of the trees on site and directly adjacent to site boundaries on 21st June 2023 to assess the potential for, or evidence of, roosting bats. The inspection followed the Bat Conservation Trust (BCT) Good Practice Guidelines 3rd edition (2016) survey methodology. Trees were assessed in full sunlight from ground level using binoculars and a high-powered torch where necessary to assess potential bat roosting suitability, including natural holes, hollows, and cavities (cracks and splits), loose bark, and epicormic and ivy growth.
- 4.10 Trees were assessed in full sunlight from ground level using binoculars and a high-powered torch where necessary to assess potential bat roosting suitability, including natural holes, hollows, and cavities (cracks and splits), loose bark, and epicormic and ivy growth. A search for evidence of use by bats was also conducted as above, see Table

1. Individual trees were then assigned a category, as defined in Table 2, and displayed in Figure 1.

Table 1: Potential Bat Roosting Features and Evidence

Potential Bat Roosting Features	Signs Indicating Possible Use by Bats
In trees - Natural holes - Woodpecker holes - Cracks/splits in major limbs - Loose bark - Hollows/cavities - Dense epicormic growth - Bird and bat boxes	- Live, dead, or skeletons of, bats - Feeding remains e.g. insect wings - Tiny scratches around entry point - Urine staining around entry point - Bat droppings in or around entry points - Audible squeaking at dusk or in warm weather - Flies around entry point - Distinctive smell of bats - Smoothing of surfaces around cavity
In buildings - Gaps around windows / doors - Gaps between mortar / brickwork - Gaps under cracked / broken / missing ridge tiles, roof tiles and hanging tiles - Gaps under lead flashing and between roofing felt flaps - Large roof void - Gaps into soffits, barge boards, gable ends and under eaves	- Live, dead, or skeletons of, bats - Bat droppings in the roof void (particularly below ridge beam and apex) - Feeding remains e.g. insect wings - Tiny scratches around entry point - Urine staining around entry point - Bat droppings in or around entry points - Audible squeaking at dusk or in warm weather - Flies around entry point - Distinctive smell of bats - Smoothing of surfaces around cavity

Table 2: Categories for Bat Roosting Potential

Category	Criteria
Negligible Potential	No evidence, no suitable Potential Roost Features (PRFs)
Low Potential	No evidence of use, one or two features suitable for low numbers of bats, with very limited roosting potential. Limited connectivity to wider landscape with other bat habitats.
Moderate Potential	No evidence of use, several suitable features, but unlikely to support a roost type of high conservation status, connected to wider landscape with good foraging habitat.
High Potential	No evidence of use, but many suitable features for use by larger numbers of bats on a more regular basis and potentially for longer

Table 2: Categories for Bat Roosting Potential

Category	Criteria
	periods. Well connected to good foraging habitat and known roosts nearby.
Confirmed Roost	PRFs with evidence of use present, observation or previous records of bats confirmed to be roosting in the tree.

Bat Emergence Survey

- 4.11 A single dusk emergence survey of buildings B1, B2, and B3 (Figure 2) was completed by Fiona Baker (Natural England bat survey license CL 18 - 2015 - 12847- CLS-CLS, Level 2), Sam Ashby, Georgia Robertson, Minty Spooner, and Voy Bach on 18th July 2023. The survey was conducted in accordance with Collins (2016), in suitable weather conditions. Calls were recorded using Echo Meter Touch (EMT) recorders with Apple iPad devices.
- 4.12 The EMT automatically identifies calls in the field, using the Kaleidoscope Pro Bat Auto-identification software. However, auto identification is designed for records of single bats in free flight and uncluttered (e.g. open fields) environments and is not appropriate for roost emergence, multiple bats, cluttered environments (e.g. among tall vegetation) or social calls. Calls were therefore further analysed in line with published guidance (Reason *et al.* 2016) using Kaleidoscope.
- 4.13 Analysis of bat calls may not always provide a confident conclusion of the species recorded due to the overlap in range of peak frequencies of some species and the way that calls may change within cluttered environments. BCT (2016) highlights that published literature has shown that identifying *Myotis* species with confidence without observing species specific behaviour is extremely difficult (Parsons and Jones 2000; Walters *et al.* 2012). Where a confident conclusion could not be drawn as to the species, calls were identified to genus level such as *Myotis* spp.

Reptile Habitat Assessment

- 4.14 The habitats on site were assessed for their potential to support reptiles. Features suitable for hibernation, basking, feeding, and raising young are considered. Suitable reptile habitats on site are denoted on Figure 2.

Reptile Survey

- 4.15 Sam Ashby and Lorna Scott completed reptile presence/absence surveys comprising seven visits in July 2023. Reptile refugia (roofing felt 1m x 0.5m) were laid in transects, at a density of 17 per hectare, across the development site. Surveys commenced two weeks following distribution of the refugia, to allow reptiles to become familiar with their presence. Visits were conducted in suitable weather conditions (temperatures between 9-18°C), in accordance with Froglife (1999). Results are shown on Figure 2.

- 4.16 Where reptiles are found, the maximum count of adults found on a single survey (the peak count) can be used to estimate population size; this is based on an extended survey with an additional 13 visits (Froglife 1999). However, additional visits may not be a proportionate approach where they are unlikely to significantly change the results.
- 4.17 Population sizes may be estimated according to two methodologies; the Froglife (1999) survey methodology is based on 10 refugia per ha, therefore where more are used to ensure coverage of good quality habitat, the peak count is adjusted to account for the increase in survey effort. HGBI (1998) methodology uses the density of individuals per hectare of suitable habitat to assess population size; the peak count of individuals is divided by the size of suitable habitat.
- 4.18 The results are then compared with the tables below to give a representative population size (Table 3).

Table 3: Reptile Population Estimates (HGBI 1998; Froglife 1999)

Froglife (1999) Population Size Estimates			
Species	Adjusted Peak Count / ha		
	Low Population (Score 1)	Good Population (Score 2)	Exceptional Population (Score 3)
Adder <i>Vipera berus</i>	<5	5-10	>10
Grass snake <i>Natrix helvetica</i>	<5	5-10	>10
Common lizard <i>Zootoca vivipara</i>	<5	5-20	>20
Slow worm <i>Anguis fragilis</i>	<5	5-20	>20
HGBI (1998) Populates Size Estimates			
Species	Adult Peak Count / ha		
	Low Population	Medium Population	High Population
Adder	<2	2-4	>4
Grass Snake	<2	2-4	>4
Viviparous lizard	<20	20-80	>80
Slow worm	<50	50-100	>100

- 4.19 The Key Reptile Site Register is designed to allow the safeguard of important reptile sites. Based on Froglife (1999) criteria, this can provide an objective evaluation of the importance of the reptile populations on a site.
- 4.20 To qualify for the Key Reptile Site Register the site must either a) support three or more reptile species; b) support two snake species; c) support an exceptional population of

one species, d) support an assemblage of species scoring four or more according to Froglife (1999) population estimates (Table 3); e) be of particular importance due to local rarity.

Breeding Birds

- 4.21 Habitats on site were assessed for their suitability to support nesting and foraging birds. Any birds or nests observed during the survey were recorded, shown on Figure 1, and will be discussed in Section 5.

Other Species

- 4.22 The in-house desk study included a search for accessible ponds within 250m of the site boundary. Any suitable waterbodies found are subject to Habitat Suitability Index (HSI) (ARG 2010) assessments for great crested newts *Triturus cristatus*.
- 4.23 Sam Ashby (accredited under Fiona Baker (License No.: 2016-21954-CLS-CLS)) conducted a search for suitable hazel dormouse *Muscardinus avellanarius* habitat within, and within the vicinity of, the site during the PEA survey on 21st June 2023.
- 4.24 All habitats within the site boundary and immediately adjacent (where access was possible) were surveyed for evidence of European badgers *Meles meles*. following the methodology recommended by Harris *et al.* (1994), and the Forest Operations and Badger Sett's Guide 9 (Forestry Practice Divisions 1995).
- 4.25 Incidental observations of other, important, or notable species were also recorded, where found these are included in Section 5.
- 4.26 The survey on 21st June 2023 also included a search for the presence of non-native invasive plant species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Ecological Impact

- 4.27 Ecological Impact Assessment (EclA) is most formally used to provide the ecological component of an Environmental Impact Assessment (EIA) required under EIA Regulations. The alternative use of assessing the impact of a proposal to ecology as used for the purposes of this report, is to demonstrate the approved development accords with relevant planning policy and legislation. This approach is recommended by BS42020: 2013.
- 4.28 The impact assessment identifies, quantifies, and evaluates likely significant effects on habitats and species. The methodology used in this assessment broadly follows guidelines in CIEEM (2018). Ecological features are classified in terms of importance at a geographic scale (Appendix 1). Evaluation of impacts follows the mitigation hierarchy; this involves avoiding impacts, mitigating unavoidable impacts, compensation for remaining significant residual effects, and seeking enhancements for biodiversity.

5 Limitations

- 5.1 The results of surveys detailed within this report provide evidence of the presence of protected species of flora and fauna, or the potential for such species, evident at the time of the survey.
- 5.2 Due to the transient nature of fauna such as bats and their habitats, the results of these surveys are valid for 18 months from completion (CIEEM, 2019), unless otherwise stated in relation to specific species within this report and unless there is sufficient justification to show otherwise, in line with best practice guidance.
- 5.3 The age of survey data and mitigation considered acceptable by Natural England for the purpose of assessing whether to grant a European Protected Species Mitigation Licence (EPSML) is subject to change by Natural England at any time. Survey data may need to be updated within the survey season immediately prior to the EPSML application.
- 5.4 Online desk studies are completed using data acquired from www.magic.gov.uk interactive maps, managed by Natural England. Data present has not been updated consistently; reference made to online data is in accordance with the data as is available on Magic at the time of undertaking the search.
- 5.5 Assessment for the presence or absence of invasive species will depend on the accessibility of the habitats on site, and the time of year for example scrub or other dense vegetation will restrict access and visibility. Surveys carried out in winter may not capture plants where leaf growth has not started.
- 5.6 Assessments within this report are based on a site visit and layout provided (Drawing Number 7217_SK01). Subsequent changes to the layout may result in a requirement to reassess the potential impacts of the development and the requirements for future survey, or avoidance, mitigation, and enhancement measures.
- 5.7 Recommendations for mitigation and enhancements provided within this report are based on the initial findings of habitat and/or protected species surveys undertaken to date, current best practice guidance and legislation in place at the time of writing.
- 5.8 Findings and recommendations within this report are based on the professional opinion of qualified and experienced ecologists and do not constitute professional legal advice.

6 Results and Discussion

- 6.1 In this section the results and subsequent implications of the surveys are discussed and assessed in context of previous ecological assessments and the potential impacts of the development. Recommendations for mitigation, in the context of relevant guidance and legislation, are provided in Section 8. A summary of relevant legislation is provided in Appendix 2.

Desk Study

- 6.2 The immediate surrounding habitats of the site are a fence-lined hedgerow to the north, a line of trees to the south and, beyond this, a railway offering connectivity to residential gardens and recreational grounds.
- 6.3 Designated sites and their distance from the site are summarised in Table 4. Section 41 habitats coastal vegetated shingle, good quality semi-improved grassland, and deciduous woodland are found within 1km of the site.
- 6.4 No ponds were identified within 250m of the site boundary.

Statutory Designated Sites

- 6.5 The site is located within 2km of Shoreham Beach Local Nature Reserve and South Downs National Park. The site lies within the Impact Risk Zone (IRZ) for Adur Estuary SSSI (3.43km W of site). Proposals involving aviation or oil extraction within this IRZ require consultation with Natural England (NE) during planning application. The proposed development does not meet these criteria, therefore the Local Planning Authority does not need to consult Natural England in respect of this proposal.

Non-statutory Designated Sites

- 6.6 There are no non-statutory designated sites within 2km of the site.

Table 4: Statutory Designated Sites Located within 2km of the Site Boundary

Site Designation/ Reference	Reason for Designation	Approx. Distance and Direction from Site
<i>Statutory Designated Sites</i>		
Shoreham Beach Local Nature Reserve	Vegetated shingle habitat with 155 plant species recorded to date, including the nationally rare starry clover <i>Trifolium stellatum</i> .	1.88km SW
South Downs National Park	Rich downland with unimproved/semi-improved calcareous grassland, ancient woodland, and riparian habitat. Sustains a rich composition of invertebrates and birds, with several protected reptile, amphibian, and mammal species.	1.2km N
<i>IRZs of SSSI sites</i>		

Table 4: Statutory Designated Sites Located within 2km of the Site Boundary

Site Designation/ Reference	Reason for Designation	Approx. Distance and Direction from Site
Adur Estuary IRZ	Saltmarsh habitat at risk of decline. Planning permission required for aviation and oil extraction works within this IRZ.	3.43km W

Ancient Woodland

- 6.7 The site is located approximately 4.85km (southwest) from the closest area of ancient woodland listed on the woodland inventory as Ancient and Semi-natural Woodland at Withdean Woods, with further Ancient and Semi-natural woodland approximately 5.03km northwest of the site at Old Erringham Farm.

Priority Habitats

- 6.8 The site is located approximately 650m northeast from the priority habitat coastal vegetated shingle, 550m north of good quality semi-improved grassland, 810m southwest of deciduous woodland, 1.69km south of lowland calcareous grassland, 1.8km southeast of lowland meadows, and 1.83km northeast of priority mudflats.
- 6.9 Connectivity to the wider areas including the continuity of habitat to designated sites is interrupted by the roads and residential areas present which act as dispersal barriers to wildlife in these areas. However, the railway and associated linear habitats immediately south of the site may be used by wildlife commuting to other habitats.
- 6.10 The site is formed of common and widespread habitat types, dominated by modified grassland and urban habitats, and is therefore considered to be of low ecological importance with the exception of the protected species it has the potential to support, bats, reptiles, and breeding birds. Measures will be required for tree protection and Environmental Agency (EA) compliance, see Section 8 for further details.
- 6.11 The proposal offers the opportunity to significantly increase the ecological importance of the site, through the introduction of a wildlife corridor running along the southern boundary which would strengthen connections to off-site habitats; this would be enhanced by landscape features and planting designed to benefit wildlife. Enhancements are discussed further in Section 9.

Protected, Rare or Species of Conservation Concern

- 6.12 A summary of the relevant records of protected, rare, and species of conservation concern held by SxBRC are provided in Table 5. Records, or absence of such records, for species relevant to the habitats on or adjacent to site from the last decade are discussed below. A summary of bird records is provided in Appendix 5.

Table 5: Summary of Protected Species Recorded within 2km (5km for bats) of the Site Boundary

Species Scientific Name	Species Common Name	Number of Records	Distance and Direction (of closest record) from Site
Bats (5km)			
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	17	2.5km NE
<i>Plecotus auritus</i>	Brown long-eared bat	1	4.9km N
Unidentified bat		16	2.1km E
<i>Pipistrellus</i> spp.	Unidentified pipistrelle	10	3.4km E
<i>Eptesicus serotinus</i>	Serotine	70	1.8km N
<i>Nyctalus leisleri</i>	Lesser noctule	47	4.9km NE
<i>Plecotus</i> spp.	Unidentified long-eared	1	2.5km NE
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	5	2.4km E
<i>Myotis</i> spp.	<i>Myotis</i> species	3	2.5km NE
<i>Nyctalus noctula</i>	Noctule	1	2.7km N
<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	1	4.6km NEE
Amphibians			
<i>Rana temporaria</i>	Common frog	18	1.1km SE
<i>Lissotriton</i>	Smooth newt	20	1.8km NNE
Reptiles			
<i>Zootoca vivipara</i>	Viviparous lizard	51	1.7km NE
<i>Vipera berus</i>	Adder	8	0.5km W
<i>Anguis fragilis</i>	Slow worm	151	0.3km E
Mammals (Excluding Bats)			
<i>Erinaceus europaeus</i>	West European hedgehog	76	0.1km E
<i>Muscardinus avellanarius</i>	Hazel dormouse	7	1.8km NE
<i>Lepus europaeus</i>	Brown hare	5	1.7km NW
<i>Oryctolagus cuniculus</i>	European rabbit	1	2.1km N
<i>Halichoerus grypus</i>	Grey seal	1	1.9km SW

UK Habitat Classification

- 6.13 The site is comprised of g4 - modified grassland, g16 - tall herb communities, w1174 - line of trees, and urban habitats including u1b - developed land, sealed surface, u1b5 - buildings, u1c - artificial unvegetated, unsealed surface, u1e - built linear features, ub510 - sports field, and ub17 - ruderal/ephemeral. Habitat descriptions are illustrated in Figure 1. Photographs of habitats on site are included in Appendix 3. A full list of plant species recorded across the site is provided in Appendix 4.

g4 – Modified Grassland

- 6.14 The majority of the site is formed of modified grassland, this habitat type is grassland that is used for amenity purposes or is of low species distinctiveness often due to high levels of management and nutrient enrichment. Modified grassland is found along the eastern and southern site boundaries. This grassland shows signs of previous management but sward length is now considerably longer than that of the sports field. Species identified in this habitat include Yorkshire fog *Holcus lanatus*, creeping buttercup *Ranunculus repens*, wall barley *Hordeum murinum*, white clover *Trifolium repens*, and ribwort plantain *Plantago lanceolata*.

G16 – Tall Herb Communities

- 6.15 This habitat exists beneath the line of trees adjacent to the southern site boundary. Species identified here include alexanders *Smyrniolum olusatrum*, bristly oxtongue *Helminthotheca echioides*, hedge mustard *Sisymbrium officinale*, and common nettle *Urtica dioica*.

w1174 – Line of Trees

- 6.16 A line of trees exists intermittently along the southern boundary. Species include field maple *Acer campestre*, sycamore *Acer pseudoplatanus*, cypress *Cypressus* spp., and elder *Sambucus nigra*.

u1b – Developed Land, Sealed Surface

- 6.17 This habitat includes areas of hardstanding bordering the sports field and extending into the northeastern corner of the site surrounding B4 and B1. This habitat does not support any vegetation.

u1b5 - Buildings

- 6.18 Five buildings exist within the site: a sports facility formed of three discrete but joined buildings B1 - B3, an open turnstile entrance (B4) and three storage containers (grouped as B5). B1 is of brick construction with plastic fascia below a felt roof; B2 with corrugated metal construction with plastic fascia and felt roof; B3 is formed of wooden boarding with a corrugated roof connecting B1 and B2. The buildings are not currently in use. Further descriptions regarding features suitable for roosting bats can be viewed below in the section 'Bats'.

u1c - Artificial Unvegetated, Unsealed Surface

- 6.19 This habitat includes the woodchip that extends from the southwestern corner of the site towards the northwestern corner surrounding a storage unit. The majority of this habitat does not support any vegetation, though some sections show sparse wall barley and herb species such as bristly oxtongue and alexanders.

u1e - Built Linear Features

- 6.20 All site boundaries are defined by built linear features; brick walls demarcate the eastern, southern, and western boundaries while the northern boundary is defined by wire mesh and palisade fencing.

ub510 - Sports Field

- 6.21 The sports field is comprised of managed grassland a form of modified grassland. The grassland has been routinely managed and remains in use as a sports facility thus the sward length is short. White clover and Yorkshire fog were identified here.

ub17 – Ruderal /Ephemeral

- 6.22 Immediately south of B2 lies ruderal/ephemeral vegetation including spear thistle *Cirsium vulgare*, hedge bindweed *Calystegia sepium*, common nettle, and common mallow *Malva sylvestris*. Beneath the vegetation lies a pile of construction debris and litter.

Invasive Species

- 6.23 No invasive species were identified during the PEA site visit.

Evaluation of Habitats on Site

- 6.24 The site is formed of common and widespread habitat types, dominated by modified grassland and urban habitats; therefore, the site is of low ecological importance, with the exception of the protected species it supports, reptiles, and breeding birds. Measures will be required for tree protection, see Section 8 for further details.
- 6.25 The proposal offers the opportunity to significantly increase the ecological importance of the site, through the introduction of a wildlife corridor running parallel to the railway to the south which would strengthen connections to off-site habitats. This section would be enhanced by landscape features and planting designed to benefit wildlife, alongside removal of poor condition trees, and replacement with native species. Enhancements are discussed further in Section 9.

Bats

- 6.26 Bats, and their roosts, are protected under the EU Habitats Directive (transposed into UK law as the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019), and the Wildlife and Countryside Act 1981 (WCA) (as amended); this protects bats from killing, injury, capture, and disturbance of their roosts from damage, destruction, and obstruction.
- 6.27 The desk study provided no records for bats within the site boundary. However, there were several records of bats within 5km of the site (Table 5).

Building Assessment

- 6.28 Buildings B1, B2, and B3 were deemed to have low to moderate bat roosting potential due to the features present (Figure 1) according to BCT guidelines; given the site location, poor surrounding habitat with limited foraging opportunities for bats and limited connectivity to further suitable habitat for bats. B4 nor the storage units (B5) offered any roosting potential or notable roosting features. PRFs observed are described in Table 6.

Table 6. Potential Roosting Features Identified on Site

Building No.	Description	Potential Roosting Features	Aspect	Bat Roost Potential
B1	Northern section of the sports facility. Brick construction with plastic fascia and roofing felt.	Three holes in plastic fascia	S, W, E	Moderate
B2	Southern section of the sports facility. Corrugated metal construction.	Lifted window flashing. Hole between roofing felt.	S SW corner	Low
B3	Section connecting B1 and B2. Wooden construction with corrugated metal roof.	Roof corrugations are open access on both sides.	E, W	Low
B4	Turnstile building. Brick construction.	Open doorways.	S	Negligible
B5	Storage units at the northeast, northwest, and southwest corners of the site boundary.	None.	N/A	Negligible

Emergence Survey

- 6.29 No bats were seen to emerge from the buildings on site during the survey on 18th July 2023. Table 7 describes the conditions under which the survey was completed. There were no bat calls recorded during the survey.

Table 7: Bat Emergence Survey Conditions

Date	Sunset time	Start time (BST)	End time (BST)	Cloud cover (%)	Temperature (°C)	Wind	Rainfall
18.07.23	21:06	20:51	22:36	95	18	8mph W	0

- 6.30 The design of the development will result in the loss of three buildings with low potential for bat roosts. Survey results relating to bats are considered valid for 12 months.

Evaluation of Bats in Light of the Development

- 6.31 As no bats are roosting in the buildings on site, no impacts to roosting bats will result from the approved development and a NE EPSML is not required. The proposal is considered to be compliant with known legislation in regard to bats. It was noted that streetlights surrounded the stadium and lighting to the bridge and footpath from the adjacent railway station impacted the site. In conjunction with the use of lighting for the sports field conditions will remain unsuitable for bats, therefore, no further recommendations have not been given in relation to bats.

Great Crested Newt

- 6.32 Great crested newts (GCN), and their breeding/resting places, are protected under; the EU Habitats Directive (transposed into UK law as the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019), and the Wildlife and Countryside Act 1981 (WCA) (as amended). Together these protect GCNs from killing, injury, capture and disturbance, and their breeding/resting places from damage, destruction, and obstruction.
- 6.33 No records of GCN are held within 1km of the site. No licence applications were found within 2km of the site. No suitable waterbodies for GCN were found within 250m of the site and the habitat on site is considered to be unsuitable for GCN. Therefore, GCN surveys are not required and GCN are not discussed further within this report.

Dormice

- 6.34 Dormice and their breeding/resting places are protected under the EU Habitats Directive (transposed into UK law as the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019), and the Wildlife and Countryside Act 1981 (as amended).
- 6.35 The desk study provided seven records of dormice within 2km distance of the site. However, the PEA survey did not identify any suitable dormouse habitat on site. Therefore, no further surveys are required and dormice are not discussed further within this report.

Reptiles

- 6.36 A peak count of 18 adult slow worms was recorded during the surveys (Table 8). In addition, a peak count of three juvenile slow worms was recorded. No other reptiles were recorded during the surveys. Full reptile survey results are provided in Appendix 6 and illustrated in Figure 2.

Table 8. Reptiles Recorded on Site

Survey Visit No	No. Adult Slow Worms	No. Juvenile Slow Worms
1	11	1
2	0	0
3	14	3
4	14	1
5	16	2
6	18	1
7	15	2
Peak Count	18	3

- 6.37 Slow worm observations were recorded within and adjacent to the ruderal habitat south of B2, within modified grassland with longer sward along the eastern boundary, and within the tall herb vegetation along the southern boundary, see Figure 2.
- 6.38 Peak counts are adjusted when the refugia used exceeds 10 per hectare of suitable reptile habitat (Table 9; Froglife 1999). The adjusted peak count counts of slow worm are consistent with a 'Good' population when considered against Froglife (1999) criteria (Table 3; Table 9).

Table 9. Estimated Slow Worm Population Size According to Froglife (1998) Guidance

Refugia		Suitable reptile habitat (ha)		Refugia per ha (rounded up)		Froglife refugia per ha		Division figure	Adjusted peak count
19	/	0.09	=	211	/	10	=	2.1	18 / 2.1 = 9 (‘Good’ Population)

- 6.39 The population estimate according to HGBI (1998) guidance suggests the site supports a 'High' population of slow worms (Table 10).

Table 10. Estimated Slow Worm Population Size According to HGBI (1998) Guidance

Peak Count		Suitable reptile habitat (ha)		Population Estimate (Individuals per ha)
18	/	0.09	=	200 ('High' Population)

- 6.40 Assessment of peak counts against Froglife (1999) confirm that, based on the data collected, this site would not be considered a key reptile site. Based on the results to date, consistency of survey findings, and refugia fidelity (*i.e.* consistent numbers of individuals were found beneath respective refugia), it is considered unlikely that further surveys would significantly change this result.

Ecological Importance of Reptiles on Site

- 6.41 Slow worms are common and widespread in Sussex. Therefore, the good/high slow worm population on site is considered of local importance. The presence of juveniles suggests the site provides suitable breeding areas for slow worms.

Evaluation of Reptiles in Light of the Development

- 6.42 Reptiles are protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended). There is a possibility of killing and injury of slow worms during site preparation and construction activities. The 'Good'/'High' population of slow worms is located to the eastern and southern site boundaries; this is likely due to the shelter provided by the long sward, lack of disturbance, and short grass basking area in conjunction with links to undisturbed habitat along the railway corridor. Measures provided in Section 8 will be implemented to ensure there will be no significant negative impact to slow worms.
- 6.43 Slow worm ranges are very small, estimated at approximately 50m². The boundary tall herb vegetation and longer grassland will be retained. Incorporating hibernacula into the proposal will provide hibernation habitat for slow worms and a positive long-term impact. Enhancement measures are detailed in Section 9.

Badgers

- 6.44 Badgers, and their setts, are protected in the UK under the Protection of Badgers Act 1992. No badger records were provided in the desk study.
- 6.45 No signs of badgers or their setts were located on, or within the immediate vicinity of, the site during the PEA survey thus further badger surveys were not required. The wall and fence-lined boundaries of the site offer limited permeability, with the push through in the wire fence surrounding the substation being smaller than a badger, thus the site is not considered likely to be currently frequented by badgers.

Breeding Birds

- 6.46 All active bird nests are protected under the WCA 1981 from damage/destruction. Furthermore, birds that are listed on Schedule 1 of the Act are also protected from disturbance while they are nesting.
- 6.47 No bird records from within the site boundary were provided from the desk study. Records for the following notable birds were found within 1km: kingfisher *Alcedo atthis*, spoonbill *Platalea leucorodia*, quail *Coturnix coturnix*, skylark *Alauda arvensis*, linnet *Carduelis cannabina*, firecrest *Regulus ignicapillus*. The site does not offer suitable habitat to support these species. The full bird results from the desk study are listed in Appendix 5.
- 6.48 Incidental observations of birds on site include carrion crow *Corvus corone*, house sparrow *Passer domesticus*, European magpie *Pica pica*, and wood pigeon *Columba palumbus*. Common swifts *Apus apus* and herring gulls *Larus argentatus* were observed within the vicinity of the site. Two active bird nests were identified in the line of trees to the south of the site during the PEA survey. In addition, an off-site tree with canopy overhanging the western site boundary holds nesting potential. Recommendations for timing of works to trees and supervision, if required, are provided in Section 8. Enhancements to increase the nesting potential of the site are provided in Section 9.

Other Protected Species

Hedgehogs

- 6.49 The desk study provided 76 records of hedgehogs within 2km of site. The tall herb and ruderal habitats are considered suitable for hedgehogs; while none were observed during the site survey, it is considered possible that they may use the habitat features on-site. There is limited accessibility to site for hedgehogs currently, though wire fence surrounding the substation along the northern site boundary shows a push-through possibly used by a hedgehog (see Appendix 3). Precautionary measures are detailed in section 8 and enhancements in Section 9.

7 Planning Context

- 7.1 Relevant protected species legislation is given in Appendix 2.

National Planning Policy

- 7.2 Biodiversity, in particular protected species and habitats, is a material consideration of all planning applications. The National Planning Policy Framework (NPPF) was adopted in March 2012 (Amended July 2021).
- 7.3 The NPPF requires that the local planning authority should aim to enhance biodiversity when determining planning applications, and opportunities to incorporate biodiversity in and around developments should be encouraged, especially where this can secure

measurable net gains for the environment. Chapter 15 “Conserving and enhancing the natural environment”, states that this should be achieved by:

“..minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures..”

7.4 Local planning authorities should therefore apply the following principles, taken from Paragraphs 174 to 188, when determining planning applications:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.”

7.5 The following should be given the same protection as habitats sites:

1. potential Special Protection Areas and possible Special Areas of Conservation;
2. listed or proposed Ramsar sites; and
3. sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

7.6 The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has

concluded that the plan or project will not adversely affect the integrity of the habitats site.

Regional/Local Planning Policy

- 7.7 Adur District Council's Local Development Framework, adopted in December 2017, includes the following relevant policies (Adur District Council 2017):

"Policy 30: Green Infrastructure:

Green infrastructure will be protected and enhanced and access to it improved where necessary and appropriate. When considering green infrastructure provision, the ecological characteristics of the area will be taken into account in order to maximise the biodiversity benefits.

Developments will be required to incorporate elements of green infrastructure into their overall design, and/or enhance the quality of existing Green Infrastructure as appropriate...

All new major developments will need to demonstrate how they will contribute to the implementation of the Green Infrastructure Strategy both at site level and with regard to the wider green infrastructure network.

The planting of trees will be supported and encouraged and Tree Preservation Orders will be made to ensure that healthy locally important trees that make a positive contribution to the streetscene are protected."

"4.91 - new developments should seek to incorporate elements of green infrastructure into their design where appropriate, for example through provision of green roofs, SuDS, 26 landscaping, tree planting etc."

"4.94 - All new developments will be required to take account of and incorporate biodiversity features at the design stage."

"4.95 - Conserving biodiversity is not just about protecting rare species and designated nature conservation sites. It also encompasses the more common and widespread species and habitats, all of which make an important contribution to quality of life. The Council will work with partners to conserve and enhance the biodiversity and geological diversity of Adur."

"Policy 31: Biodiversity:

All development should ensure the protection, conservation, and where possible, enhancement of biodiversity...

If significant harm cannot be avoided (by locating development on an alternative site with less harmful impacts), then such harm should be adequately mitigated. Where it cannot be adequately mitigated then such harm must be compensated for. Where it cannot be compensated for, then planning permission should be refused."

8 Mitigation

- 8.1 The following recommendations are provided to ensure no harm will come to protected species residing on or moving through site and to mitigate the loss of habitat to such species. An ecological mitigation strategy will be provided, which will detail full methodologies and technical specifications for fencing installation, habitat clearance, timing of works, and relevant enhancements, and will fulfil condition 13 of the approved planning permission.

Designated Sites

- 8.2 The site is located within the IRZ of the Adur Estuary SSSI, requiring further planning permission for proposals including oil extraction or aviation. This proposal will not pose these risks to SSSIs; consultation with Natural England is unlikely to be required for this proposal. In addition, the proposal does not comprise residential units thus it is not likely to increase visitor numbers to local SSSIs and other designated sites.

Habitats

- 8.3 The new requirement for development projects to achieve 10% biodiversity net gain is not due to come into force for small projects until November 2024. However, the NPPF states “opportunities to incorporate biodiversity in and around developments should be encouraged, especially where this can secure measurable net gains for the environment”.
- 8.4 Recent landscape proposals (Drawing Number 7217_03) indicate the sports pitch will be replaced with artificial grassland, the existing buildings will be demolished and replaced by a sports facility building, areas of hardstanding to the north and southwest of the site will be removed and seeded, and the suitable reptile habitats (Figure 2) will be retained. These retained areas will be designated as protected wildlife corridors. The grassland here will be mown annually only and will be enhanced with native species rich planting. Habitat mitigations are illustrated in Figure 3.
- 8.5 Trees being retained will be protected by Tree Protection Fencing (TPF) to standard BS5837. The advice of an arboriculturalist will be followed to create root protection areas. TPF will be erected prior to any site work and will remain in place until the completion of all construction and landscaping. Materials will not be stored within or against the TPF at any time.

Protected Species

- 8.6 Measures to mitigate harm to protected species are illustrated in Figure 3.

Reptiles

- 8.7 Due to the presence of slow worms on site, mitigation measures will be followed to prevent any harm to these species during the construction of the proposed

development. Mitigation measures will be detailed in an Ecological Mitigation Strategy to be provided as a condition of the planning decision.

- 8.8 At the time of writing, it is not known whether the site boundary walls will be replaced. These works would be destructive to the suitable reptile habitats thus suitable receptor areas must be provided in advance of these works, should they be required. The EMS will detail required specifications for receptor sites. Figure 3 illustrates two options for reptile receptors:

Option 1) If the boundary walls are not replaced or subject to any destructive works, the two existing habitat areas suitable for reptiles will be retained and protected by semi-permanent reptile exclusion fencing. Once all site works are complete, the reptile fencing will be removed.

Option 2) The existing unvegetated surface in the southwest corner of the site will be turfed and made into a suitable receptor site protected by reptile fencing. The existing suitable habitat areas along the eastern and southern site boundaries will be used for a temporary reptile translocation and individuals found will be relocated to the new receptor site while works to the boundary walls take place.

This option would be contingent on any works occurring in the southwest corner of the site being completed prior to translocation and time allowed for the planted habitat to become suitable for reptiles. Receptor site specifications will be provided in the EMS.

A 30-day translocation will be carried out during suitable weather periods between April and September avoiding the sensitive hibernation period from October to March. The translocation will take place following the LPA approval of the EMS and establishment of the receptor site. Once it has been confirmed by the client ecologist that planting and features are in a suitable condition for use by reptiles, the translocation can progress.

- 8.9 According to HGBI (1998) guidance, 'High' slow worm populations constitute a 90-day translocation period. However, considering the limited size and permeability of the site and suitable reptile habitats, and the limited range of slow worms (~50m²), a 30-day translocation is considered proportional on this occasion.
- 8.10 If the demolition of the existing buildings occurs in advance of planning permission under Permitted Development rights, it must follow the EMS to be provided. Demolition works will avoid existing slow worm habitats; buildings will be dismantled onto the sports pitch to avoid the adjacent ruderal habitat. If this is not possible, and thereby it is not possible to demolish the buildings without posing a risk to slow worms on site, a suitable receptor area such as that detailed above will be prepared prior to works and a translocation effort would ensue. Once the buildings are demolished,

surrounding vegetation should be routinely managed to prevent reoccupation and further mitigation work.

- 8.11 Any removal of suitable habitats will be completed under ecological supervision:
- o Works will be carried out during the active period for reptiles (April to September)
 - o Piles of building debris or other refugia, such as that existing south of B2, will be displaced by hand.
 - o Vegetation will be strimmed to 15cm before being searched, by hand, by an ecologist.
 - o Vegetation will then be strimmed to ground level.
 - o Any reptiles found will be relocated to a designated receptor area (Figure 4).
 - o A 5-ton machine with a toothed bucket will be used to perform a destructive search after suitable habitats have been strimmed.
- 8.12 To mitigate the loss of suitable reptile hibernation habitat, three hibernacula will be implemented outside of the construction boundary following specifications provided in the EMS. Three log piles will be constructed to mitigate the loss of reptile foraging habitats.

Breeding Birds

- 8.13 The line of trees along the southern boundary, and a single tree canopy overhanging the site, offer nesting potential and two active nests were recorded during initial site visits. The line of trees will be retained. The tree adjacent to the western boundary will be subject to nesting bird checks if felling or limb cutting are required during the nesting bird season (March to August inclusive). If active nests are found, a suitably qualified ecologist must be informed and it will be protected by a buffer zone; works surrounding the tree will cease until the young have fledged.

Other Species

- 8.14 Precautionary measures are required during construction to avoid trapping badgers or hedgehogs in trenches or holes. These measures include covering any steep sided holes or trenches or leaving a sturdy ramp or plank within to provide an escape route.

9 Enhancement Recommendations

- 9.1 The NPPF requires that the local planning authority should aim to enhance biodiversity when determining planning applications and opportunities to incorporate biodiversity in and around developments should be encouraged.

- 9.2 The following enhancements have been designed to provide new opportunities for species occurring within the local area.
- 9.3 The following enhancements will be detailed within the EMS to be incorporated within the development (Figure 3):
- Native tree planting to extend and enhance existing treelines.
 - At least two integral bird nesting boxes installed upon the new sports facility building to provide additional nesting opportunities. The placement of these will be designed to encourage use of new habitat features that result from the development. The Ibstock Swift Eco Habitat brick or other suitable products may be used.
 - Installation of two, tree-mounted nest boxes upon the line of trees to the south.
 - Installation of at least one invertebrate box.
 - Integration of two 13 x 13cm holes at the base of boundary walls to the southwest, enabling access to and from the recreational fields for reptiles, amphibians, hedgehogs, and other small mammals. Hedgehog Highway signs will be mounted in proximity. These holes will not be covered at any time.
 - Replacement of hardstanding adjacent to the northern fence boundary with wildflower meadow planting to increase biodiversity on site.
- 9.4 Management of newly created and retained habitat will be undertaken annually to ensure longevity. The wildflower meadow will be cut to 5cm six to eight weeks after sowing, with cuts every two months for the first summer (RHS 2022). A seed mix such as the Meadow Mixture for Loamy Soils (Emorsgate Seeds 2022) is recommended. Once the meadow is established, it will be cut twice a year, once in late autumn and again in winter. Avoiding cutting in the spring and summer will allow the majority of flower species to bloom and drop seed, reducing disruption to their life cycles and increasing the chances of successful wildflower meadow establishment. A sign will be erected to inform visitors of this area and reduce the chances of it being mown.

10 Conclusion

- 10.1 The site comprises common and widespread habitats, predominantly modified grassland, buildings, and associated hardstanding and unvegetated surfaces. These habitats are considered to be of low ecological value with the exception of the UK protected reptile species slow worm present to the south and eastern boundary.
- 10.2 A 'Good' (Froglife 1999) or 'High' (HGBI 1998) population of slow worms was recorded on site; mitigation measures outlined in Section 8 will be followed prevent harm to this species. The EMS report to be provided as a condition of planning will detail

methodology for works required to create a suitable receptor area in response to an assessment of the full restoration works required to boundary walls.

- 10.3 Birds are confirmed to be using the site for nesting; the line of trees to the south will be retained and mitigation measures will help prevent disturbance of bird nests. Precautionary methodology is provided for hedgehogs.
- 10.4 In the context of relevant biodiversity legislation, providing the measures outlined in Section 8 the approved development will remain compliant with relevant biodiversity legislation.
- 10.5 In the context of Chapter 15 of the NPPF the enhancements in Section 9 of this report will ensure the approved development will remain compliant with this policy.

11 References

Adur District Council (2017). Adur Local Plan. Available from: <https://www.adur-worthing.gov.uk/media/Media,159572,smxx.pdf> (Access July 2023)

ARG (2010). *ARG Advice Note 5: Great Crested Newt Habitat Suitability Index*. Available from: <http://www.arguk.org/info-advice/advice-notes/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5/file> (Accessed July 2023).

Bat Conservation Trust & Institution of Lighting Professionals (2018). *Bats and the Built Environment Series, Guidance Note 08/18: Bats and artificial lighting in the UK*. Available from: <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/> (Accessed July 2023)

Bat Conservation Trust (2018). *Bat Survey Good Practice Guidelines*. Bat Conservation Trust, London.

Bat Conservation Trust (2018). *Bats and artificial lighting in the UK*. Available from: <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349> (Accessed July 2023)

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). *UK Habitat Classification – Habitat Definitions v1.1*. Available from: <http://ukhab.org> (Accessed July 2023)

Chartered Institute for Ecology and Environmental Management (CIEEM) (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine, 3rd edition*. Available from: <https://cieem.net/wp-content/uploads/2019/02/Combined-EcIA-guidelines-2018-compressed.pdf> (Accessed July 2023)

CIEEM (2017). *Guidelines For Ecological Report Writing. 2nd edition*. Available from: <https://cieem.net/wp-content/uploads/2019/02/Ecological-Report-Writing-Dec2017.pdf> (Accessed July 2023)

CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Available from: <https://cieem.net/resource/guidance-on-preliminary-ecological-appraisal-gpea/> (Accessed July 2023)

CIEEM (2019). *Advice Note, On the Lifespan of Ecological Reports and Surveys*. Available from: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf> (Accessed July 2023)

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

Defra (2021). *Environment Act 2021*. Available from: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted> (Accessed July 2023)

Department for Levelling Up, Housing and Communities (2021). *National Planning Policy Framework*. Available from: <https://www.gov.uk/guidance/national-planning-policy-framework> (Accessed July 2023)

Emorsgate Seeds (2022) *Meadow Mixture for Loamy Soils EM5*. Available from: <https://wildseed.co.uk/product/mixtures/complete-mixtures/meadow-mixtures-for-specific-soils/meadow-mixture-for-loamy-soils/> (Accessed July 2023).

Froglife (1999). *Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.

Harris, S., Cresswell, P., and Jeffries D.J, (1989) *Surveying Badgers*. Mammal Society, London.

HGBI (1998) *Evaluating Local Mitigation/Translocation Programmes: Maintaining Best Practice and Lawful Standards*. HGBI, Suffolk.

MAGIC (2023) *Interactive Map*. Available from: <http://www.magic.gov.uk/home.htm> (Accessed July 2023)

Natural England (January 2022). *Reptiles: advice for making planning decisions*. Available from: <https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences> (Accessed July 2023)

Parsons, S. and Jones, G. (2000). Acoustic Identification of 12 Species of Echolocating Bat by Discriminant Function Analysis and Artificial Neural Networks. *Journal of Experimental Biology*, 203: 2641-2656

Reason, P., Newson, S.E., and Jones, K.E. (2016). *Recommendations for using automatic bat identification software with full spectrum recordings*. Available from: <https://www.bats.org.uk/news/2016/04/recommendations-for-using-automatic-bat-identification-software> (Accessed July 2023).

Royal Horticultural Society (RHS) (2022). *Wildflower meadow: maintenance*. Available from: <https://www.rhs.org.uk/lawns/wildflower-meadow-maintenance> (Accessed July 2023).

Walters, D., Freeman, R., Collen, A., Dietz, C., Fenton, M.B., Jones, G. ... Jones, K.E. (2012). A Continental Scale Tool for Acoustic Identification of European Bats. *Journal of Applied Ecology*, 49: 1064-1074.

12 Appendices

Appendix 1 Level of Importance

Appendix 2 Relevant Legislation

Appendix 3 Site Photographs

Appendix 4 Plants Identified on Site

Appendix 5 Bird Records Obtained from SxBRC

Appendix 6 Full Reptile Survey Results

Appendix 1: Level of Importance

Geographic Scale	Example
International	An internationally designated site¹, or site which would meet the criteria for such a designation. A viable area of Annexe 1 habitat type, or smaller area essential to maintain the viability of a larger whole. Any regularly occurring population of an internationally important species, threatened or rare in the UK. A regularly occurring, nationally significant population/ number of any internationally important species.
National	A nationally designated site², or site which would meet the criteria of such a designation. A viable area of a Habitat of Principal Importance and priority habitats in England (NERC Act 2006) or smaller areas essential to maintain the viability of a larger whole. Any regularly occurring, regionally or county significant population/number of any nationally important species. A feature identified as of Habitat or Species of Principal Importance or Priority habitats
Regional	Sites which exceed the County-level designations but fall short of SSSI selection guidelines. Viable areas of key habitat identified in the Regional BAP or smaller areas essential to maintain the viability of a larger whole. Viable areas of key habitat of Regional value in the appropriate Natural Area profile. Any regularly occurring, locally significant population of a species nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of regional rarity or localisation. A regularly occurring, locally significant number of a regionally important species.
Metropolitan, County, Vice County	Semi-natural ancient woodland greater than 0.25ha. County/Metropolitan sites which meet the published ecological selection criteria for designation, including Local Nature Reserves (LNR) selected on County/Metropolitan ecological criteria. A viable area of Habitat of Principle Importance and Priority Habitats in England (NERC) A regularly occurring, locally significant population of a County/Metropolitan "red data book" or LBAP species on account of regional rarity or localisation. A regularly occurring, locally significant number of a County/Metropolitan important species.
District	Semi-natural ancient woodland smaller than 0.25 ha. Areas of habitat identified in a sub-county (District/Borough) BAP or in the relevant Natural Area profile. District sites that meet the published ecological selection criteria for designation, including LNR selected on District/Borough ecological criteria. Sites/features scarce within the District/Borough. A diverse and/or ecologically valuable hedgerow network. A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation. A regularly occurring, locally significant number of a District/Borough important species during a critical phase of its life cycle.
Local	Areas of habitat considered to appreciably enrich the habitat resource within the context of the parish or neighbourhood (e.g. species-rich hedgerows); and LNRs selected on parish ecological criteria.
¹ Such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs) or, Wetlands of International Importance (RAMSAR) ² Such as Site of Special Scientific Interest (SSSI)	

Appendix 2: Relevant Legislation

Species	Legal Protection
Bats, Dormice, GCN	All British species of bats, GCN and dormice and their resting and breeding sites, have legal protection under UK and European law (Wildlife and Countryside Act (WCA) 1981 (as amended), and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019) It is an offence to: • capture, kill, disturb or injure a dormouse • damage or destroy a breeding or resting place • obstruct access to their resting or sheltering places • possess, sell, control or transport live or dead individuals, or parts of them
Badgers	Badgers, and their setts, are protected in the UK under the Protection of Badgers Act 1992. It is an offence to: • intentionally capture, kill or injure a badger • damage, destroy or block access to their setts • disturb badgers in setts • treat a badger cruelly • deliberately / intentionally allow a dog into a sett • bait or dig for badgers
Reptiles	All common reptiles are protected from killing or injury under the WCA 1981, as amended.
Birds	All active bird nests are protected under the WCA 1981, as amended from damage/destruction. Furthermore, birds that are listed on Schedule 1 of the Act are also protected from disturbance while they are nesting.
Invasive Plants	Species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are considered to be invasive. It is an offence to plant or cause these species to grow in the wild.
Protected plants, fungi or lichens	For plants, fungi or lichens listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) it is an offence to intentionally pick, uproot, or destroy them, unless it could not be reasonably avoided (e.g. the incidental result of a lawful action).
Section 41 Priority Species	Regard must be given to the conservation of species listed as rare and threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006) when making planning decisions.

Appendix 3: Site Photographs



Left: View of the site from the southern boundary with sports field in the centre.



Right: View of the northern site boundary with wall and fence linear features.



Left: View from the southwest corner of the site boundary showing the line of trees, tall herb vegetation, and sports field.



Right: Potential Roosting Features identified on B1 and B3; holes in plastic fascia and open-ended roof corrugation.



Left: Eastern aspect of B1 with hole in plastic fascia PRF visible.



Right: Southern aspect of B2 with PRFs including the raised window flashing and gap besides drainpipe.



Left: Western site boundary with hardstanding and woodchip substrate, wall-lined boundary, and overhanging tree with bird nest potential.

Right: Suspected mammal push-through adjacent to the northern site boundary.



Left: Southern wall-lined boundary with footpath and railway fence beyond.

Right: Habitat adjacent to the southwestern site boundary connecting to recreational grounds.

Appendix 4: Plants Identified on Site

Common name	Species name	Habitat
Creeping buttercup	<i>Ranunculus repens</i>	Modified grassland
Ribwort plantain	<i>Plantago lanceolata</i>	
Yorkshire fog	<i>Holcus lanatus</i>	
White clover	<i>Trifolium repens</i>	
False oat grass	<i>Arrhenatherum elatius</i>	
Wall barley	<i>Hordeum murinum</i>	Modified grassland Artificial unsealed, unvegetated surface
Bristly oxtongue	<i>Helminthotheca echinoides</i>	Ruderal/ephemeral Tall herb vegetation
Spear thistle	<i>Cirsium vulgare</i>	Ruderal/ephemeral
Bindweed	<i>Convolvulus</i> spp.	
Common mallow	<i>Malva sylvestris</i>	
Alexanders	<i>Smyrniololus satrum</i>	
Hedge mustard	<i>Sisymbrium officinale</i>	Tall herb vegetation Artificial unsealed, unvegetated surface
Common nettle	<i>Urtica dioica</i>	
Rosebay willowherb	<i>Chamerion angustifolium</i>	
Field maple	<i>Acer campestre</i>	
Sycamore	<i>Acer pseudoplatanus</i>	Line of trees
Cypress	<i>Cypripedium</i> spp.	
Elder	<i>Sambucus nigra</i>	
Holly	<i>Ilex aquifolium</i>	
Ground ivy	<i>Hedera helix</i>	
		Artificial unsealed, unvegetated surface

Appendix 5: Bird Records Obtained from SxBRC

Scientific Name	Common Name	Record Date Range	Abundance
<i>Anas platyrhynchos</i>	Mallard	26/05/2015	7
<i>Anser albifrons</i>	White-fronted Goose	30/11/2020	1
<i>Cygnus olor</i>	Mute Swan	15/12/2014 - 26/05/2015	14
<i>Melanitta nigra</i>	Common Scoter	15/05/2020 - 20/02/2021	17
<i>Apus apus</i>	Swift	03/07/2019 - 07/07/2020	27
<i>Charadrius hiaticula</i>	Ringed Plover	13/05/2014 - 27/05/2016	30
<i>Larus argentatus</i>	Herring Gull	13/05/2017 - 13/05/2018	75
<i>Larus canus</i>	Common Gull	11/01/2013 - 29/11/2021	854
<i>Larus fuscus</i>	Lesser Black-backed Gull	17/04/2015	2
<i>Larus marinus</i>	Great Black-backed Gull	17/04/2015	5
<i>Platalea leucorodia</i>	Spoonbill	09/04/2013	2
<i>Columba oenas</i>	Stock Dove	11/04/2020	4
<i>Streptopelia turtur</i>	Turtle Dove	25/05/2021	1
<i>Alcedo atthis</i>	Kingfisher	21/08/2019	1
<i>Coturnix coturnix</i>	Quail	21/07/2014	1
<i>Gavia arctica</i>	Black-throated Diver	05/04/2020	1
<i>Gavia immer</i>	Great Northern Diver	19/11/2015 - 24/12/2015	10
<i>Gavia stellata</i>	Red-throated Diver	24/10/2013 - 09/02/2019	3
<i>Alauda arvensis</i>	Skylark	18/05/2013	2
<i>Emberiza calandra</i>	Corn Bunting	03/05/2020	3
<i>Linaria cannabina</i>	Linnet	23/06/2014 - 13/05/2017	7
<i>Loxia curvirostra</i>	Crossbill	05/04/2020	1
<i>Phoenicurus ochruros</i>	Black Redstart	01/05/2013 - 23/06/2014	5
<i>Passer domesticus</i>	House Sparrow	08/05/2016 - 13/05/2018	386
<i>Prunella modularis</i>	Dunnock	26/05/2015 - 20/03/2016	2
<i>Regulus ignicapilla</i>	Firecrest	26/05/2015	1
<i>Sturnus vulgaris</i>	Starling	05/01/2015 - 13/05/2018	122
<i>Turdus viscivorus</i>	Mistle Thrush	11/04/2020	1
<i>Podiceps auritus</i>	Slavonian Grebe	23/02/2014	4

Appendix 6: Full Reptile Survey Results

Survey No.	Date	Temperature	Cloud Cover (%)	Rain	Adult Male	Adult Female	Juvenile	Refugia No.
1	20.07.23	19-20	5	None	3	8	1	2/4/5/12/13/14/19
2	21.07.23	17	80	None	0	0	0	
3	24.07.23	16	50	Light	2	12	3	2/3/4/6/8/9/10/12
4	25.07.23	18	75	None	3	11	1	2/3/4/7/9/12
5	26.07.23	18	100	None	5	11	2	2/4/6/7/11/12/13/15
6	28.07.23	20	100	None	4	14	1	2/3/4/6/8/11/12/13/15
7	31.07.23	18	100	Recently stopped	6	9	2	2/3/4/5/8/11/15