
5th December 2018

**Dorset Innovation
Park**

**Landscape and
Ecological
Management Plan
(LEMP)**

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APPENDIX **1**

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN



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Dorset Innovation Park
Landscape and Ecological Management Plan

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Section 1: Introduction

Instruction

- 1.1. This Landscape and Ecological Management Plan (LEMP) has been prepared by Tyler Grange LLP on behalf of Purbeck District Council (the Council) in respect of Dorset Innovation Park (DIP), Winfrith Newburgh, Dorset DT2 8FT (hereafter referred to as the 'site'). The site is centred on National Grid Reference SY 826 864 and is illustrated on Figure 1.



Figure 1: Site location

Context and Purpose of LEMP

- 1.2. The site covers approximately 40ha. It was previously a testing facility though now supports a large technology park consisting of buildings, hardstanding, species poor and species-rich grassland, ornamental planting and trees, native trees and woodland, scattered scrub, hedgerows, a stream (mostly in culvert) and a pond.
- 1.3. The site was designated as an Enterprise Zone by the Local Enterprise Partnership (LEP) and was purchased by the Council¹ in April 2017. The site is a key focus for economic regeneration of South Dorset. A Local Development Order (LDO) is to facilitate and guide re-development of the site. The LDO will have a 25 year lifespan. A number of buildings on the site have already been demolished; however, there are still active plots, which will remain *in situ* during the re-development of the site.
- 1.4. The site is in an ecologically rich area, and detailed surveys have confirmed important ecological features would be affected by the site's redevelopment. It was agreed with the Dorset Natural

¹ all reference to the Council refers to the joint interests of Purbeck District and Dorset County Council who are joint owners of the site and will be merging with all other Councils to form Dorset Council on 1st April 2019



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Environment Team (NET) and Natural England that a comprehensive LEMP be prepared to accompany and inform the LDO application. The LEMP describes a strategy to provide the required certainty that the impacts of the proposed development at the site can be mitigated, and that the DIP will deliver overall biodiversity gain.

Scope of the LEMP

- 1.5. The scope and contents of this LEMP have been discussed and agreed with Natural England (Nick Squirrel) and the Dorset Natural Environment Team (NET; Annabel King).
- 1.6. The LDO supports important ecological features, and is in a very important area, ecologically. The LEMP is central to the delivery of the LDO in that it describes an overarching ecological and landscape strategy for the LDO area.
- 1.7. The LEMP describes the issues, design rationale, impacts and mitigation and enhancement strategy. It also describes the management strategy to ensure successful delivery, and a mechanism to monitor and feedback.
- 1.8. The mitigation and enhancement strategy covered by the LEMP falls predominantly within the parkland element of the LDO, outside of individual development parcels. This would be delivered by the Council as an initial 'enabling works' phase to remove the majority of the constraints from development plots. Given the dynamic nature of ecological features, the LEMP also sets out a management strategy to ensure that new ecology issues do not establish in the intervening period between the enabling works and construction of individual development plots.
- 1.9. The LEMP also provides an 'ecological design guide' for individual development plots outside of the parkland. This is informed by good practice in ecological design and local conservation strategies, such as the Dorset Biodiversity Strategy (2003), to ensure that where appropriate, habitat creation and landscape planting proposals are appropriate to the local heathland context, and in keeping with the DIP site-wide design strategy, as set out in the DIP Design Guide (Stride Treglown, 2018).

- 1.10. The LEMP should be read alongside the DIP Design Guide, which contains further information on the rationale and design of the parkland, as well as development plots.

Adaptive Management and Modification of the LEMP

- 1.11. Given the 25 year lifespan of the LDO, the LEMP will require review and potentially revision during its lifecycle, in light of update ecological data, with associated alterations and updates to the mitigation, if required. The frequency of these updates has been included within the LEMP.

Structure of the LEMP

- 1.12. Table 1 below sets out the structure of the LEMP.

Table 1: Structure of the LEMP

LEMP Section	Contents
Section 2	Summary of important ecological features that would be affected by the LDO
Section 3	Ecological Issues and Requirement for Mitigation: Ecological impacts anticipated as a result of the proposed development. Requirement for mitigation including site-wide mitigation rationale for habitats and protected species.
Section 4	Mitigation and enhancement strategy: setting out the overarching principles for the LDO area in response to issues described in Section 3
Section 5	Constraints to management and management prescriptions for retained and newly created features. Monitoring requirements are also described.

Mechanism for Control of Delivery

- 1.13. In accordance with Dorset County Council's biodiversity appraisal process², which ensures planning applications are in conformity with relevant planning policy and legislation, a Biodiversity Mitigation Plan (BMP) has been prepared for the LDO area covered by this LEMP. BMPs summarise impacts on flora and fauna and describe mitigation and compensation; the BMP is then controlled by planning condition³.
- 1.14. Each individual plot will be subject of Pre-Development Notice and Submission(s) under the LDO, and each will require its own BMP to be produced. This will be a straightforward exercise, since it can refer to the mitigation principles outlined in the BMP for the LDO. Each BMP would then only need to set out (as required by policy), the ecological enhancements proposed through e.g. landscape planting, provision of bird and bat boxes, and so on. Given the duration of the LDO and the dynamic nature of ecological features, each BMP will need to be informed by up-to-date survey data (refer to paragraphs 3.5 and 3.6). The implementation of the BMP would then be controlled by a condition attached to each Pre-Development Notice.

Funding and Responsibility for Delivery

- 1.15. As landowner, the Council will hold responsibility for the implementation of the LEMP.
- 1.16. Management of the parkland will fall to the Council. Green infrastructure delivered by development proposals for individual plots (designed in accordance with DIP Design Guide and this LEMP), will also be capable of being managed by the Council, subject to agreement with the Council. This is likely to result in economies as well as benefits associated with a consistent approach to site management by a single management party.
- 1.17. Management would be funded by a service charge levied on each plot developer.
- 1.18. Once a plot is adopted by a developer, it will be their responsibility to implement the mitigation, management and monitoring for that plot, in accordance with the BMP.

² <https://www.dorsetforyou.gov.uk/article/391637/How-does-the-Biodiversity-Appraisal-process-work>

³ For the purposes of the LEMP, the LDO and subsequent detailed submissions are treated as being an application submitted under the Planning Act, albeit governed by the articles and regulations as applying to Local Development Orders



Section 2: Summary of Important Ecological Features

- 2.1. A full ecological assessment, informed by detailed ecological surveys has been undertaken on the site throughout 2017 and 2018 to inform the LEMP (Lindsay Carrington Ecological Services, 2017 and 2018; Edwards, B., 2016 and 2018). Ecological features relevant to the LEMP are summarised below.

- 2.2. The importance of ecological features follows the method described by CIEEM 2016.

Designated Sites

- 2.3. Dorset Heathlands Ramsar Site and Dorset Heathlands Special Protection Area (SPA) are located adjacent to the southern boundary of the site. The sites consist of a variety of habitats including dry and wet heaths, acid mire, grassland, wetland, and salt marshes which support a large and varied assemblage of nationally rare and scarce flora and fauna including internationally important numbers of southern damselfly *Coenagrion mercuriale*. The SPA is designated for its populations of breeding Dartford warbler *Sylvia undata*, nightjar *Caprimulgus caprimulgus* and woodlark *Lullula arborea* and overwintering hen harrier *Circus cyaneus* and merlin *Falco columbarius*.
- 2.4. Dorset Heaths Special Area of Conservation (SAC) is located approximately 40m from the western boundary of the site. The SAC is designated for its Annex I habitats types including: purple moor-grass *Molinia caerulea* meadows on calcareous, peaty or clayey-silt-laden soils, calcareous fens with great fen-sedge *Cladium mariscus* and species of the *Caricion davallianae*, as well as alkaline fens and old acidophilous oak woods with pedunculate oak *Quercus robur* on sandy plains. The SAC has populations of southern damselfly which are a primary designation feature of the SAC as well as great crested newt *Triturus cristatus* which are a qualifying feature though not a primary reason for selection.
- 2.5. Winfrith Heath Site of Special Scientific Interest (SSSI) is located adjacent to the western site boundary and is part of the Dorset Heathlands SPA. It is known to support the interest features of the SPA as well as populations of the Annex II listed reptiles smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*.
- 2.6. The River Frome SSSI is located approximately 180m north of the site north of the site and comprises a major chalk river with aquatic habitats ranging from calcareous substrate through to a mixed geology which supports species rich flora and in turn rare and scarce fauna including: aquatic invertebrates, fish including the European eel *Anguilla Anguilla*, salmon *Salmo salar* and brown trout *Salmo trutta*, breeding and wintering birds, otter *Lutra lutra* and water vole *Arvicola amphibius*. The River Win, a tributary of the Frome, runs adjacent to the east of the site with a small section located within the southeast corner of the site boundary where the bridge crosses river. The tributary of the River Win that flows through the site boundary has been heavily culverted and fitted with metal gates.
- 2.7. Winfrith Site of Nature Conservation Interest (SNCI) is located adjacent to the western boundary of the site it supports a small remnant of heathland and wet woodland habitats.
- 2.8. Figure 2 below shows the location of the statutory designated sites in relation to the site boundary and Figure 3 shows the non-statutory sites

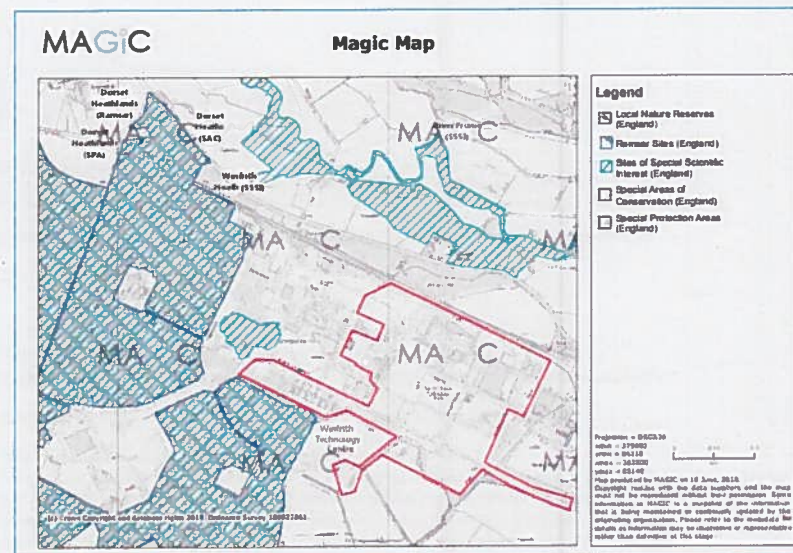


Figure 2: Location of statutory designated sites (Map produced by MAGIC on 18th June 2018. © Crown Copyright and database rights 2018, Ordnance Survey 100022861).



Habitats and Flora

- 2.9. The habitats within the site are illustrated in **Appendix 1**.
- 2.10. The dominant habitat on site is grassland. This is varied in species-richness and quality. Much is species-poor semi improved grassland, though a good proportion is species-rich acid grassland with unimproved qualities (**Photograph 1**) (Edwards, B., 2016). Detailed surveys have confirmed the acid grassland comprises of the following NVC communities:
- U1b *Festuca ovina* - *Agrostis capillaris* - *Rumex acetosella* grassland Typical sub-community; and
 - U1d *Festuca ovina* - *Agrostis capillaris* - *Rumex acetosella* grassland *Anthoxanthum odoratum* - *Lotus corniculatus* sub-community.
- 2.11. The detailed botanical survey in 2016 identified a total of 22 acid grassland indicator species across the site (Edwards, 2016) including heath dog-violet *Viola canina*, heath speedwell *Veronica officinalis*, and tormentil *Potentilla erecta* which are listed on the English Red List (Stroh *et al.* 2014) with heath dog-violet also listed on the UK Red List (Cheffings *et al.* 1995). The nationally scarce bearded fescue *Vulpia cilia subsp. ambigua* was also recorded in parched soils where the land is disturbed and sand and gravel subsoils exposed, and adjacent to kerbs and slabs (**Photograph 2**).



Photograph 1: Species-rich acid grassland in compartment L (refer to **Appendix 2**).



Photograph 2: Bearded fescue on skeletal soils in compartment D.

- 2.12. In 2018, the number of acid grassland indicator species had reduced to 17 with slender parsley *Aphanes inexpecta*, blue fleabane *Erigeron acris*, slender trefoil *Trifolium micranthum*, heath speedwell and heath dog-violet all no longer present. This is considered to be primarily due to a relaxation of the mowing regime to only once or twice a year with arisings left on site (in 2016, much of the grassland across much of the site was managed under an intensive amenity cutting regime, with arisings removed.). Since then, the cutting regime has been modified, with arisings – and hence a source of nutrients that would limit species-richness – removed (Edwards, 2018).
- 2.13. In order to inform the mitigation strategy described in the LEMP, the interest of the grassland has been 'ranked' by the botanist that undertook the surveys. Areas of U1b and U1d, as well as those with high numbers of lowland acid indicator species (five species or greater), are high interest and shown as red in **Appendix 3**. Grassland which had small numbers of acid grassland indicators is of moderate interest is shown as yellow. All other grassland is of low interest and is shaded green.
- 2.14. In terms of its relative ecological importance, and to provide context, none of the grassland meets the criteria for SNCI selection in Dorset (Dorset Wildlife Trust, 2011) as the species identified in 2016 and 2018 did not include five or more Dorset notables or nationally scarce species; however, it is still Lowland Dry Acid Grassland Priority Habitat⁴. Habitats meeting the SNCI selection criteria would be considered to be of county importance. Using the criteria as a benchmark, Table 2 below shows how the interest level (Edwards 2016 and 2018) of the grassland is considered to equate to its ecological importance (as defined using the method advocated by CIEEM, 2016). To inform the compensation for habitat loss, described in the approved BMP for the LDO, the grassland 'interest' derived using the Dorset Biodiversity Compensation Framework (DBCF) is also shown (refer to paragraph 4.42 for more information on the DBCF).

Table 2: Acid Grassland Interest levels (derived by Edwards 2018) and ecological importance derived using the method advocated by CIEEM, 2016. To Inform later compensation, value derived from DBCF is also shown

⁴ a Habitat of Principal Importance (HoPI) under the Natural Environment and Rural Communities Act (2006)

Acid Grassland Interest Level (Edwards, 2018)	Ecological Importance (CIEEM, 2016)	Value derived from DBCF
High	District	Local interest grassland
Moderate	Local	Local interest grassland
Low	Site	Semi-improved poor grassland

- 2.15. It should be noted that the site's location adjacent to the important heathland does elevate the importance of the site as a whole, it forming part of a mosaic of heathland type habitats. This is reflected in the mitigation strategy described in the LEMP.
- 2.16. Other habitats on site include buildings and associated infrastructure, planted woodland dominated by Pine *Pinus sp.* and scattered trees including poplar *Populus sp.*, birch *Betula sp.*, fruit trees *Prunus sp.*, willow *Salix sp.* and non-native species. Scattered trees are also present surrounding a pond to the east of the site, which, as a result of over-shading, is in sub-optimal condition, containing no aquatic vegetation. Scattered bramble *Rubus fruticosus agg.* and hawthorn *Crataegus monogyna* scrub combined with ornamental planting is present and surrounds many of the buildings.

Fauna

Badgers

- 2.17. A badger survey was undertaken by Lindsay Carrington Ecological Services on the 13th September 2017.
- 2.18. No setts or latrines were recorded on site, however, evidence of badger activity in the form of snuffle holes and paths were recorded in the south western section of the site. Snuffle holes were also recorded on the north eastern boundary close to the railway line. Badgers are protected from persecution rather than for conservation, therefore any population present on site is considered to be of negligible ecological importance, though the species is protected from harm or cruel and ill treatment.

Bats

- 2.19. Bat surveys were undertaken in August – October 2017 and April 2018 by Lindsay Carrington Ecological Services. This comprised external surveys of buildings and trees, a single emergence survey, three activity surveys with deployment of four static detectors for five nights and climbing of three trees identified as having potential to support roosting bats.
- 2.20. Only B12 (Chapman House) was identified as having low roosting potential, with all other buildings on site assessed as being negligible roosting potential. No bats were recorded during the 2017 emergence survey.
- 2.21. A total of three trees were assessed as being of low potential and were subject to tree climbing in April 2018. No potential features were observed during these surveys so the trees were reclassified as having negligible ecological potential.

- 2.22. Bat activity and static surveys in 2017 recorded an assemblage of bats with the woodland patches and heathland areas in the south of the site identified as the habitats of most importance to bats. Regular use by barbastelle *Barbastellus barbastellus*, an Annex II species, was recorded here. Greater horseshoe *Rhinolophus ferrumequinum* bats were also recorded on the eastern boundary, close to the pond. Central site areas are well lit and species tolerant of such conditions, namely common pipistrelle only, were recorded here.
- 2.23. In 2018, the transect survey recorded only common pipistrelle and soprano pipistrelle, the majority being recorded in the southern half of the site. The static surveys once again recorded an assemblage of up to seven species including a single barbastelle on the southern boundary of the site.
- 2.24. Overall the site was assessed as having county ecological importance for bats.

Birds

- 2.25. Breeding bird surveys of the site were undertaken in 2018. A total of 42 bird species were recorded on site with 20 species confirmed as breeding in low numbers. In addition, during 2017 a barn owl *Tyto alba*, was recorded flying over the site during the bat surveys. The site is considered to support a breeding bird assemblage of up to district ecological importance (Lindsay Carrington Ecological Services, 2018).
- 2.26. A single woodlark was recorded on the western boundary of the site and given it was present in suitable habitat it was considered likely to be breeding. This breeding pair represent 1.6% of the breeding population described within the citation of the Dorset Heath SPA and therefore this on site habitat is considered functional habitat of the SPA.
- 2.27. During the bat surveys a nightjar was seen flying adjacent to building 12 (Appendix 1) at the south of the site; there was also churring heard on the adjacent heathland. During the 2018 surveys, two nightjars were recorded churring, two were seen foraging and displaying and a third perched on scrub on the heathland to the south west of the site. No nightjar were recorded on the site itself (Lindsay Carrington Ecological Services, 2018b).

Fish

- 2.28. The River Frome, located to the north of the site, is known to support European Eel which is a UK BAP priority species and is protected under legislation including the Salmon and Freshwater Fisheries Act 1975 (SAFFA) and more recently, the Eel (England and Wales) Regulations 2009. Salmon and Brown trout are also a UK BAP priority species and protected under SAFFA. The River Win, adjacent to the eastern boundary of the site is a tributary of the River Frome and therefore has potential to support these species, as does the tributary of the River Win which flows within the site along the southern boundary.

Great Crested Newt

- 2.29. Records of great crested newt (GCN) were identified within the 2km of the site, however, surveys of the pond in 2018 confirmed that GCN are not present on site (Lindsay Carrington Ecological Services, 2018a) and therefore the species is not likely to be present. A Habitat Suitability Index (HSI) assessment of the pond indicates that it has 'below average' suitability to newts.

Invertebrates

- 2.30. Four invertebrate surveys were undertaken on the site in May and June 2018. A total of 410 invertebrate fauna were identified on the site including three species listed as Species of Principal Importance (SoPI): small heath butterfly *Coenonympha pamphilus*, Cinnabar moth *Tyris jacobaeae* and Blood-vein moth *Timandra comae* (Denton, J. and Dodd, S., 2018). These were part of three favourable assemblages associated with the rich flower resource, open short sward and scrub edge. The invertebrate assemblage on site is considered to be of at least district ecological importance.

Otter

- 2.31. Otter spraints were recorded on the River Win in 2017 and 2018. The culverted watercourse within the site is extremely sub-optimal and unlikely to be of importance to otter. No evidence of otter holts has been recorded within the site. Otters have large home ranges and therefore any individual using the site habitats is likely to be part of a population using a much larger area, and that would be of up to district ecological importance.

Reptiles

- 2.32. In 2017, low numbers of sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* were recorded in the west and the north of the site respectively and a low number of grass snake *Natrix helvetica helvetica* and good numbers of common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* were recorded in the scrub and grassland mosaic habitat present on the northern and southern boundaries of the site. The majority of the rest of the site is unsuitable for reptiles.
- 2.33. The reptiles recorded are part of populations present within the adjacent heathland. As the site supports one or more of the rarer, and more heavily protected, species (smooth snake and sand lizard) and four or more breeding or native reptile species, the site in isolation meets the criteria for SNCI selection (Dorset Wildlife Trust, 2011) and therefore the site is of county ecological importance to reptiles.

Water Vole

- 2.34. The ditches on site and the stream located to the east were considered to offer suitable habitat for water vole *Arvicola amphibius*. Potential water vole burrows were recorded on the stream to east of the site during 2017 and 2018 surveys but nowhere else on the site; however, no other evidence of the species was recorded on either occasion, therefore they are not considered to be a feature of the site.

Summary of Importance of Ecological Features

- 2.35. Table 3 summarises the existing important (local and above) ecological features based on existing baseline information.

Table 3: Existing ecological features and level of importance based on existing baseline information. NERC denotes Habitats and Species of Principal Importance, as defined in the Natural Environment and Rural Communities Act 2006; WCA denotes Wildlife and Countryside Act, 1981 (as amended); Habitats Regulations denotes Conservation of Habitats and Species Regulations 2017.

Feature	Importance	Legal Protection
Dorset Heathlands Ramsar site	International	Habitats Regulations
Dorset Heathlands SPA	International	Habitats Regulations
Dorset Heaths SAC	International	Habitats Regulations
Winfrith heath SSSI	National	WCA
River Frome SSSI	National	WCA
Winfrith SNCI	County	-
Species rich acid grassland	Up to district	NERC
Species-poor semi-improved grassland	Site	None
Other habitats (scattered trees, scrub and pond)	Site	None
Badgers	Negligible	Badger Act 1992
Bats	County	Habitats Regulations, WCA, NERC
Birds	Up to district	Variously WCA Schedule 1, Red List, NERC
Eel	Up to National	Eel Regulations, Salmon and Freshwater Fisheries Act, NERC.
Invertebrates	District	NERC (some)
Otter	District	Habitats Regulations, WCA, NERC
Reptiles	County	Habitats Regulations, WCA, NERC



Section 3: Ecological Issues and Requirement for Mitigation

LDO Design Rationale

- 3.1 The potential for ecological impacts and the requirement for mitigation is described in detail in the ecological impact assessment report (Lindsay Carrington Ecological Services, 2017) and is summarised below.
- 3.2 As noted in Table 3, above, ecological features exist that are important and consequently are protected by legislation and planning policy (refer to Appendix 4). As required by the National Planning Policy Framework (paragraph 118), the 'mitigation hierarchy' principles have been adopted during the evolution of the designs for the LDO area, where significant harm to biodiversity could occur.
- 3.3 Accordingly, ecological issues have been an important consideration in the design of the green infrastructure within the parkland, specifically through:
- avoidance of impact by retaining and safeguarding important grassland communities either *in situ*, or in pre-determined locations that they would be translocated to;
 - restoration or enhancement of existing features to maximise their biodiversity potential, for instance the existing pond;
 - creating new habitats within multi-functional open spaces, to compensate for habitat losses, and to create a heathland character to the new development; and
 - providing opportunities for access and enjoyment of this natural environment by users of the DIP (which could number up to 2000 once fully occupied), whilst minimising disturbance to retained, enhanced and newly created habitats.
- 3.4 Issues affecting those ecologically important features, and their legal and policy protection identified in table 3, above, and how they would be mitigated, are described below.

Requirement for Up-to-date Survey Data

- 3.5 The following assessment of potential impacts was informed by survey data obtained in 2017 and 2018. Given the duration of the LDO and the dynamic nature of ecological features, update surveys will be required prior to works (including to inform development of individual development parcels). Such surveys will be controlled by the 3 yearly review of the LDO, to be undertaken by the Council.
- 3.6 Survey requirements will be dependent upon the nature of a given development plot and should be determined by a suitably qualified ecological consultant (and member of Chartered Institute of Ecology and Environmental Management; CIEEM), and agreed with the Dorset NET. As a minimum, they should involve an update 'extended' phase I habitat survey, undertaken in accordance with good practice guidance (JNCC, 2010), to update habitat mapping and identify presence of, or potential for, legally protected species. Where potential exists (for instance, buildings that could support roosting bats), then more detailed surveys should be undertaken, as required.

Impacts to Protected Sites

- 3.7 None of the LDO area falls within any of the identified protected sites.
- 3.8 There is no residential development proposed, therefore impacts on ground nesting birds including features of the SPA (e.g. woodlark) from dog walkers and cat predation are not anticipated.
- 3.9 Furthermore, the LDO area is enclosed by an existing security fence that will remain *in situ* during construction and for the duration of the LDO. Consequently, impacts to the interest features of the protected sites as a result of uncontrolled access and increased recreational pressure should not occur, though this is dependent on the fence remaining intact during any changes that may occur during the construction phases⁵.
- 3.10 However, the bird surveys identified a breeding pair of woodlark, a species for which the Dorset Heathlands SPA is notified, in the south west corner of the site; without appropriate mitigation there is therefore some potential for disturbance during construction.
- 3.11 The heathland habitats are sensitive to eutrophication as a result of deposition of airborne nutrients. However, of the proposed employment uses within the LDO area, only B2 industrial processes have potential to lead to such effect and given discharges to air would be controlled by separate permitting regimes, impacts are not likely to occur.
- 3.12 There is potential for the species for which the River Frome SSSI is notified including eel, salmon and brown trout to be adversely affected during the construction and operational phases as a result of the proposed development. Further detail is provided in the fauna section below.

Impacts to Important Habitats

- 3.13 Whilst the proposed development has been designed to retain some of the most ecologically important grassland, it will result in the loss of acid grassland of both district and local ecological importance (a HoPI) which will trigger the need for mitigation, with the level of intervention dependent on the importance of the grassland affected.
- 3.14 Given the long-term, phased nature of the development under the LDO, consideration of the ongoing management of parts of the site likely to be redeveloped in the future is required. If not cut in accordance with the existing regime, the importance of grassland could decline, which could impact upon the proposed mitigation to compensate for habitat loss (see Section 4). It could also result in new issues, which could constrain proposed development (for instance, relaxed management of grassland could result in dispersal and colonisation by heavily protected reptiles in areas where they do not currently exist).
- 3.15 Similarly, where parts of the site are to be cleared in lieu of future development

⁵ There is currently an accessible area of heathland that falls within the SPA and SAC boundary to the southwest and outside of the LDO area (see MP5 on figure 11286/P09c), this is within the existing security fence. Potential disturbance to the heathland once the DIP is operational will be avoided as access will be prevented by erection of a new 2.2m fence and a secure gate to be installed by the Council (see also paragraph 4.5, below). This and other heathland will then be managed under a Higher Level Stewardship Agreement. No further mitigation or avoidance measures are required.

- 3.16 There will also be some loss of species-poor semi-improved grassland which will not trigger the legislation; however, in line with the NPPF additional habitat creation will be required in order to ensure no net loss of biodiversity.
- 3.17 Some small-scale removal of scattered trees around the existing pond will be undertaken; however, the majority of scattered trees and scrub as well as the pond will all be retained within the parkland. The scattered trees are common and widespread within the wider landscape and as a result, this would not require mitigation.
- 3.18 In the absence of mitigation, development activities during the construction phase impacts could degrade retained grassland and trees, by storage or dumping of materials, soils compaction, dust deposition or pollution events. Pollution of the tributary of the River Win could also result in impacts.

Fauna

Badgers

- 3.19 No setts are currently present within the LDO area therefore impacts to setts are not anticipated; however, badgers are active at the site and update surveys will be necessary (refer to paragraphs 3.5 and 3.6). There is potential for impacts to badgers during construction, if excavations are left open.
- 3.20 Whilst a reduction in the area of grassland habitat will reduce overall the available foraging resources, given the abundance of suitable badger habitat within the wider landscape, no mitigation is considered necessary. Where it is required, new security fencing should allow access beneath for badger and other fauna.

Bats

- 3.21 Surveys in 2017 have confirmed that bat roosts are not likely to be present in buildings or trees, though if demolition of buildings occurs after 2019, survey data will be out of date and will need to be updated (refer to paragraphs 3.5 and 3.6).
- 3.22 The most important habitats for foraging and commuting bats have been identified as the southern and northern vegetated boundaries of the site, which will be retained within the Council controlled parkland.
- 3.23 Development is predominantly confined to the central site areas which are already well lit and surveys here have shown primarily use by common pipistrelle and soprano pipistrelle, which are relatively tolerant of such conditions (BCT, 2011). However, important and light-intolerant species including greater horseshoe and barbastelle have been confirmed at the LDO area's boundaries, which are very dark, with very low lux levels (including some areas at 0.0 lux) recorded. It is necessary for lighting to be designed such that foraging and commuting bats in these locations are not affected.

Birds

- 3.24 Impacts in relation to the bird interest features of the SPA are discussed above.

- 3.25 All wild birds, their nests and eggs are afforded protection under the WCA 1981 (as amended). As such the removal of woody vegetation and demolition of the buildings could trigger this legislation, which protects birds while actively nesting.

- 3.26 The development has been designed to retain the majority of habitats likely to support nesting and foraging birds. Whilst some losses of vegetation will be required, including the removal of some of the existing trees, the proposed planting of clumps of native tree and shrub species typical of the surrounding heathland will compensate for these losses.

Fish

- 3.27 During construction, in the absence of mitigation, there is potential for pollution impacts as a result of contaminated surface water run-off, siltation or disturbance to the River Win and tributary which may lead to adverse impacts on protected fish species.
- 3.28 No development is proposed within 40m of the River Win; however, development is proposed within 10m of the tributary. Without an appropriate drainage strategy in place, there would be a potential for contamination from surface water run-off including contaminants from vehicles during the operational phase.

Invertebrates

- 3.29 Whilst much of the habitat of greatest importance to invertebrates is retained (diverse grassland and the scrub edges along the southern boundary), the proposals will result in the loss of some of this. This will require compensation and ongoing management, to ensure the conservation status of the assemblage is not adversely affected.

Otter

- 3.30 During construction, in the absence of mitigation, there is potential for pollution impacts on the stream to east of the site which otters are known to use; however, there is no work proposed within approximately 40m of the banks so direct impacts to otter are not anticipated.

Reptiles

- 3.31 Reptiles, including heavily protected species (sand lizard and smooth snake) were recorded at the site's margins, where impacts are relatively unlikely to occur. Consequently, potential harm during construction, which might trigger the requirement for EPS licensing, should not occur. Elsewhere, in the absence of mitigation, there is potential for the killing and injury of individual reptiles during vegetation clearance and construction work as well as during implementation of the mitigation for the grassland loss (see below), which would be in breach of legislation. The majority of development will be carried out within areas of low suitability for reptiles; however, it is likely that some of the mitigation work will be carried out in more suitable areas.
- 3.32 It will be necessary to retain suitable management regimes for reptiles in locations where they have been recorded, to avoid potential mortality or harm, and to avoid displacing reptiles from where they currently exist.



Potential Impacts Post Ecological Mitigation

- 3.33 As stated in paragraph 1.8, above, the Council will undertake ecological mitigation to remove the majority of the constraints from development plots as an initial 'enabling works' phase. However, in the absence of intervention, there is the potential for new ecological issues to establish in the intervening period between the enabling works and construction of individual development plots.
- 3.34 The enabling works would remove important grassland habitat to expose bare ground and subsoils that will, in time, recolonise with a stress tolerant community that is likely to be of ecological importance in its own right. Whilst it would be unreasonable for a developer to have to compensate for its loss (effectively mitigating twice), without management, it is possible that legally protected species (for instance, reptiles) will colonise. This would require mitigation to avoid triggering protective legislation, but could be avoided with ongoing site management once the initial enabling works stage is complete.



Section 4: Mitigation and Enhancement Strategy

Overview

- 4.1 The ecological mitigation and enhancement strategy is illustrated on figure 11286/P09c (refer to "Plans" section of this document). Reference to species Management Prescriptions (MP) illustrated on the plan is provided below, where relevant.

Construction Phase Mitigation and Importance of Ecological Clerk of Works

- 4.2 A Construction and Environmental Management Plan (CEMP) has been prepared for the LDO which controls the detailed mitigation strategies required to avoid or minimise impacts to important and/or protected ecological features during the construction phase, to be controlled by the BMP. The CEMP includes details regarding timing of works, requirements for ecological supervision, pollution control requirements and working methods. Reference to a CEMP is provided where relevant below.
- 4.3 Whilst some mitigation measures are straightforward, even for these, it is possible for implementation to be unsuccessful without appropriate expertise on site prior to and during works. Given the techniques required, the long duration of the LDO, and the likely numerous developers, it is essential that an Ecological Clerk of Works (ECOW) is employed to ensure successful outcomes, and to devise solutions to issues as and when they arise. This will be essential for the creation of the parkland and grassland mitigation, though should not be required for individual development plots once grassland issues have been addressed (unless required under separate consenting regimes, for instance, under protected species licences).

Protected Sites

- 4.4 For the duration of the LDO and thereafter, the site area will be enclosed by a security fence, with no access to the adjacent heath. This will prevent recreational access to the protected habitats and, for instance, storage or dumping of materials.
- 4.5 The specification for the perimeter fence will need to be robust and at least 2.2m tall adjacent to the protected site. Fencing specification is detailed with the DIP Design Guide.
- 4.6 Control of dust and other potential polluting events would be via the CEMP.

Grassland

Understanding the Reasons for Importance

- 4.7 In order to determine the most effective mitigation strategy, it is necessary to consider what environmental factors dictate why certain grasslands at the site are more important than others.
- 4.8 The ecological importance of grasslands is dictated by soil (edaphic) characteristics, notably the nutrient status, together with drainage and, importantly, management. Generally, the more important species-rich swards tend to be found where the growing conditions favour competitive



species least, such as where topsoil is thin and nutrient-poor, where the soil pH is not circumneutral (i.e. higher than pH 7.5 and lower than 6.5), and/or where there is regular management from either grazing or cutting (Rodwell, 1992).

- 4.9 As noted above, Edwards (2016 and 2018) identified the most important grassland communities as U1b and U1d. Such grasslands are typically present on base-poor (acidic), low-nutrient soils in the warm and dry lowlands of southern Britain, with grazing and disturbance very important in maintenance of this community, which otherwise succeeds to bracken, scrub and woodland (Rodwell, 1992). The decline of heathland grazing by livestock and rabbits has reportedly led to the loss of many stands of this grassland type. Indeed, Edwards (2018) noted some of the more important acid grassland swards have reduced in interest since the 2016 survey where the management (grass cutting) has been relaxed (i.e. fewer cuts, with arisings, which re-introduce nutrients once they decompose, left *in situ*). In 2016 and prior to this date, grass cutting maintained the majority of the grasslands very short; grazing by rabbits further contributed to the maintenance of short, species-rich swards. Such management regimes are compatible with grassland use for amenity purposes within the parkland of the LDO area. The grassland of lower importance tends to exist where management is much less intensive and where a longer sward has developed.

- 4.10 Interrogation of site investigation data (trial pit and borehole logs) prepared by Hydrock indicates that the underlying sub-soils are free draining river terrace deposits, comprising sands and gravels. However, with the exception of one location in the southwest of the site (within compartment D; Appendix 2), the surface soils have been disturbed, with made ground present throughout. The made ground typically consists of sand to coarse gravel with broken concrete, bricks, occasional rare metal, asphalt and fragments of wood, though presumably the origins of much of this are from the soils present previously. Based on available information, there appears to be no obvious trend between topsoil depth and importance of grassland. More important grassland is supported by 13–16cm of topsoil over made ground, or in some locations, there is no topsoil; indeed, some very diverse grasslands exist on skeletal soils where subsoils have been exposed after engineering works and have recolonised with pioneer grassland. This would indicate that it would be possible to recreate or re-establish translocated grassland, provided the underlying ground conditions are suitably nutrient poor. In summary, the topsoil (where present) depths, do not appear to be a good predictor of grassland sward importance. Whilst the nutrient status of the topsoils has not been tested, it is likely that management is a dominant factor in sward importance at this site. That said, to maximise the chances of success, topsoil stripping is also an important consideration.

- 4.11 One of the rare species, bearded fescue, appears to favour the parched conditions alongside weathered kerb stones and slabs, or on gravels or skeletal soils where engineering works have taken place. It is found in relative abundance in such locations, and such edaphic conditions could be relatively easily replicated within the development.

Grassland Mitigation Rationale

- 4.12 This can be summarised as follows:

- Maximising the biodiversity potential of retained grassland by optimal management. The illustrative masterplan as set out in the Appendix to the Statement of Reasons has been designed to retain some of the most important existing communities (refer to figure 11286/P09c);
- Where losses occur, mitigation through either:

- translocation of the best grasslands to suitably prepared receptor sites within the LDO area;
- creation of conditions suitable for species such as bearded fescue, which prefers droughty, skeletal soils with little topsoil.
- Protecting important grassland retained within the parkland from impacts associated with construction.

- 4.13 The above are now described in more detail.

Construction Phase Effects

- 4.14 These would be controlled by the CEMP to avoid issues associated with compaction, storage of materials, pollution and dust deposition.

Maximising the Biodiversity Potential of Retained Grassland

- 4.15 Grassland should be managed in accordance with a cut-and-collect regime, with cuts in April, June and September. Arisings should be stockpiled in a designated area within the site or removed offsite.
- 4.16 This will maintain floristic diversity and existing importance of the high importance grassland (MP7). Other moderate (MP2) and low (e.g. MP8, MP9) grassland are likely to be enhanced as a result of such a consistent, optimal management regime.
- 4.17 Monitoring of the grassland after 5 years to determine its status and importance compared with the existing baseline could indicate that the number of cuts could be reduced to two (spring and autumn).

Grassland Translocation Strategy

- 4.18 As noted, translocation is proposed as part of the strategy. The success of this can be mixed and hence there cannot be 100% confidence of target condition being achieved. Success is reliant on use of specialist contractors. Soil conditions are important, with even small variations in nutrient status, moisture and pH between the donor and receptor site can result in eventual changes to the translocated grassland. Aftercare and supervision during works is also key to good outcomes.
- 4.19 Translocation is an expensive option and so it is necessary to weigh up the costs against the need and likely outcomes. The distance to move translocated material can have a significant bearing on cost, so moving material short distances is preferred. This has a bearing on siting of receptor areas relative to donor sites.
- 4.20 With respect to existing soils, as noted, soils are variable in nature. It has been confirmed that underlying services would not prevent soil stripping, which it has been confirmed as necessary in preparation of receptor sites. This LEMP sets out the principles of the strategy in Table 4, below. The full details of methodologies would be provided by the ecological contractor in line with these principles.

Table 4: summary of grassland mitigation hierarchy and strategy

Grassland Importance	Mitigation Rationale	Detail
High/Low All to be translocated, most as soils rather than as turf	Translocation of turfs to a suitably prepared receptor site. Only appropriate where turfs are well established and soil conditions enable turfs to hold together (e.g. MP11)	Receptor site to be prepared by topsoil strip and removal of arisings; preparation of soil bed. Turf cutting from donor site, transportation, laying and rolling. Timing: outside of plant growing season (ideally October to February, though can be extended) Mowing in April, June and September; remove arisings. No use of herbicides. MP11 moved to MP10; MP6 grassland moved to donor sites at MP4 and MP3.
	Shredding of turfs and translocation of soils where grassland sward less structurally important or where unsuitable for turf cutting and transportation	Turfs to be translocated to be broken up and transported to receptor site, where they are to be spread, rolled and then aftercare as above.
	Skeletal soils/open habitat supporting bearded fescue and other pioneer grassland species	Collect (by machine) substrate with seed bank and relocate to receptor sites e.g. MP3 where droughty conditions exist. Spread, rolled and cut, as above.
Moderate/Local 25% to be translocated	Shredding or turfs as above and translocation to a suitably prepared receptor site	As above
	Optimal management of retained habitats e.g. MP2; other habitat creation and enhancements	Mowing in April, June and September; remove arisings Habitat creation within parkland to include planting of heathland species typical of the surrounding area
Low/Low No translocation	Maximise biodiversity potential of retained habitats through optimal management	Mowing in April, June and September; remove arisings. E.g. MP8; MP9



Management Prior to Development

- 4.21 In lieu of habitat loss to development, grassland should be managed in accordance with the existing cut-and-collect regime, with cuts in April, June and September. Arisings can be stockpiled in a designated area within the site or removed offsite. This will maintain floristic diversity and minimise the likelihood of new ecological issues.
- 4.22 Once development plots have been cleared of habitats, these should be the subject of ongoing management to ensure that new ecology issues requiring specific mitigation do not establish. This would involve regular mowing to maintain any re-colonising grassland to a height of no more than 5cm. Given the nature of the substrate, this is likely to require cutting April, June and September at most.

Trees and Woodland

- 4.23 As set out in the CEMP, retained trees and scrub will be protected as part of the proposed development in accordance with best practice guidance detailed in BS 5837:2012 'Trees in relation to design, demolition and construction'.
- 4.24 Whilst it is important for visual and setting reasons to retain tree cover, non-native specimens will be removed, and groups of trees and shrubs typical of the local area will be planted to promote a heathland character to the development (refer to DIP Design Guide). Trees will be removed in accordance with phasing of development and by the Council.
- 4.25 Trees and scrub at MP1 have been confirmed as supporting important heathland birds and so management will maintain native tree and shrub cover in this location.

Pond

- 4.25 The existing pond will be retained on site and selective tree removal round the pond edges as well as removal of leaf litter and debris will allow marginal vegetation to colonise and enhance the existing feature (MP12), providing additional habitat for invertebrates, reptiles and birds. Additional marginal planting will also be undertaken.

Fauna

Badgers

- 4.26 Specific mitigation for badgers required during construction will be specified in the CEMP.

Bats

- 4.27 To minimise disturbance to bats during operation, where possible existing dark corridors (as shown on Plan 11286/P10a) will be retained at existing lux levels. Any potential changes limited to no more than 0.5 lux at 1m, 3m and 6m above ground level to ensure that light sensitive species identified using the site such as greater horseshoe and barbastelle can continue to do so.
- 4.28 In addition, as an enhancement, existing lighting east of the pond will be reduced in order to create a dark link between the site and stream corridor located immediately to the east of the site.



4.29 Lighting design will be in line with the following principles (BCT, 2014):

- No lighting to be incorporated where not necessary;
- Where necessary, consider limiting the time the lights are illuminated;
- Use of narrow spectrum light sources;
- Use of light sources that emit minimal ultra-violet light; and
- Avoiding white and blue wavelengths of the light spectrum.

4.30 A total of 15 artificial bat boxes will be installed on suitable trees within the parkland in appropriate, dark locations to be confirmed by the ECoW. The box type will be the Schwegler Bat Box 2F. This general purpose box offers suitable roosting conditions for the range of crevice dwelling bat species recorded on site and within the local area, such as common and soprano pipistrelle. The bat boxes are to be installed as high as possible (at least 4m high), have an unobstructed approach and no lighting should be directed towards them. As temperature is known to be an important factor influencing the success of artificial roost boxes (BCT, 2016) the boxes are to be sited on the southern, south-eastern and southwest aspects of the trees to receive maximum amounts of sunlight and warmth.

4.31 Bat boxes should also be incorporated into development plots, dependent on their location and likelihood of use. The siting of the bat boxes should take into consideration surrounding habitats, with boxes fronting on to, or adjacent to, tree lines, scattered trees or waterbodies, and should avoid areas that will be heavily lit at night.

Birds

4.32 Specific mitigation for nesting birds required during construction should be outlined in the CEMP.

4.33 A total of 20 general bird boxes (e.g. Schwegler 1B) would be incorporated on existing retained suitable trees within the parkland and should be considered on buildings in relation to individual plots.

Fish

4.34 Specific mitigation for fish required during construction is outlined in the CEMP.

4.35 The potential for surface water run off to result in harm to watercourse habitats and hence the fishery during the operational phase as a result of the proposed development will be managed through the implementation of the drainage strategy which has been designed to minimise changes in surface water run off. Significant impacts are not anticipated and hence no specific further mitigation is recommended.

Invertebrates

4.36 The grassland strategy outlined above, including retention and translocation of the most important grassland present on site, the continuation of the cut-and-collect grassland management regime and retention of scrub edges should ensure that potential effects to the existing important invertebrate assemblage are avoided or mitigated. Enhancements to the pond will provide better opportunities for wetland invertebrates

Otters

4.37 Specific mitigation for otters required during construction is outlined in the CEMP.

Reptiles

4.38 Specific mitigation for reptiles required during construction is outlined in the CEMP.

4.39 During operation, the majority of the areas supporting reptiles will be retained but it is important to note that grassland management for the acid grassland habitats (i.e. close-mown) is not compatible with most reptile species recorded. Plan 11286/P11 (refer to "Plans" section of this document) indicates areas where management of grassland for reptiles will need to be implemented. A 3m-5m strip adjacent to existing woodland and scrub will not be close-mown and allowed to become tussocky grassland, with management restricted to removal of scrub and saplings on an annual basis. Incorporation of log piles and specifically designed hibernacula should also be considered.

Ecological Design Principles for Individual Development Plots

4.40 Each individual development plot will be required to comply with the ecological principles of the design rationale of the LDO and the ecological conditions of the LDO. As stated in paragraph 1.14, each plot will also be required to produce its own BMP. The BMP should follow the principles outlined in the LDO Design Rationale above but should also consider the following:

- Retention and protection of any existing important ecological features (e.g. scattered trees and tree lines);
- Habitat creation to include some or all of the following: soft landscaping in accordance with the DIP Design Guide to maintain the 'heathland' character of the LDO area; waterbodies; green roofs; bat and bird boxes.
- Lighting requirements to be designed in line with the DIP Design Guide

4.41 As noted in paragraph 1.16, habitat management to maximise biodiversity would be necessary and could, by agreement, be undertaken by the Council.

Role of the Dorset Biodiversity Compensation Framework

4.42 The Dorset Biodiversity Compensation Framework (DBCF) provides a mechanism for assessing the impacts of development and whether residual effects are likely post mitigation. This can then be used to determine whether off-site options, outside of the development, are necessary, to fully mitigate the impacts of the development, and, in accordance with national and local policy, to deliver biodiversity gain.

4.43 The whole LDO area has been assessed using the DBCF; refer to the DBCF calculations submitted with the BMP for the LDO. Consequently, it is not necessary to consider the DBCF for each development plot.

4.44 Whilst the fundamental principles of development as set out in the DIP Design Guide incorporate a strong element of green infrastructure, and integrates heathland habitats into its design, a balance between retention of habitats, creation of replacement habitats and development is necessary, and the total area of semi-natural habitats as a result of development is reduced when compared with the existing baseline. The DBCF for the LDO confirms that, even with the mitigation strategy described above, there would be an overall residual impact to biodiversity as a result of the development.

- 4.45 The Council is committed to early mitigation within an 'enabling works' package, involving translocation of important grassland and precautions relating to important fauna, as required, to remove grassland constraints from development plots.
- 4.46 To compensate for residual impacts associated with habitat losses, the DBCF has been used to calculate a financial contribution to ensure compensatory habitat can be delivered on an as yet unspecified site through Dorset Biodiversity Partnership. The DBCF calculations have been submitted with the BMP for the LDO.

Section 5: Management Constraints, Monitoring and Prescriptions

Management Constraints

- 5.1 Management cannot be undertaken that would result in offences under protective legislation. As such, management would ensure conformity with all relevant legislation, including the Wildlife and Countryside Act (WCA) 1981 (as amended), the Conservation of Habitats and Species Regulations 2017, the Natural Environment and Rural Communities (NERC) Act 2006 and the Protection of Badgers Act 1992.
- 5.2 This would include the protection of any active badger setts, retention of foraging and commuting habitat for bats, nesting birds and the avoidance of killing or injuring of reptiles on the site. Specific reference to this is made where appropriate, within Section 4.

Monitoring, Review and Communication

- 5.3 Monitoring of the overall effectiveness of the management prescriptions in achieving the management objectives, will be undertaken as specified below. This will take the form of a site audit by a suitably qualified ecologist appointed by the Council to check that the measures have been undertaken and note if there are any issues on site.
- 5.4 Should any issues with any of the prescriptions outlined above be identified (e.g. a required change to timing of management), NET and NE will be consulted in order to determine a course of action which will be outlined in in short report which will be provided to the Council, the tenants of the individual plots, NE and NET.
- 5.5 Monitoring of the measures implemented on individual plots will be outlined in each individual BMP which will be produced for the site.

Management Prescriptions

- 5.6 The following management prescriptions have been identified for the LDO area and the parkland, once created as described in the DIP Design Guide. Management of individual plots is likely to follow these principles but would need to be confirmed based on individual plot requirements.

Table 5: summary of ecological management prescriptions and responsibilities

Rationale	Management Prescription	Detail	Timing / Frequency	Responsibility (bold denotes lead responsibility)
Grassland				
Ongoing management of grassland <i>in lieu</i> of development mitigation	Maintain ecological interest through regular cuts in growing season	Cut grassland to 3-5cm using cut and collect mower Dispose of arisings in dedicated composting area	3 cuts: April, June and September	Council
Management of on-site grassland post translocation and retained grassland (excluding reptile habitat; see below)	Maintain ecological interest through regular cuts in growing season	Cut grassland to 3-5cm using cut and collect mower Dispose of arisings in dedicated composting area	3 cuts: April, June and September	Council
		Monitoring of grassland sward diversity (fixed quadrats and photography) and success of mitigation. Send data to Council. Agree remedial works, if required, and modification to the LEMP.	Years 1, 5 and 10 post works	Ecologist; Council; NE and NET
		Reduce cutting frequency to two cuts, if target condition reached and 3 cuts not deemed necessary. To be agreed with NE and NET.	Year 5 or 10, if appropriate	Ecologist; Council; NE and NET
Management of cleared development plots <i>in lieu</i> of construction	Avoid ecological issues establishing post clearance through regular cuts in growing season	Cut grassland to 3-5cm using cut and collect mower Dispose of arisings in dedicated composting area	3 cuts: April, June and September	Council
Trees and Woodland				
Management of scrub and trees to maintain existing cover	Management of scrub and trees	Prune to remove dead, dying and diseased wood except where it can be safely retained as habitat for invertebrates and fungi (refer to bats below)	Annually. November to February inclusive	Council
		Replacement of trees that die soon after planting or establishment	Annually in autumn	Council



References

Rationale	Management Prescription	Detail	Timing / Frequency	Responsibility (bold denotes lead responsibility)
		Fence/guard/tube removal, and replace or adjust as required. Adjustment of tree ties and stakes as required.	Once per month	Council
		Arisings from woodland management to be retained in log piles within parkland. Stumps to remain in-situ.	As required	Council
Pond				
Maintain pond	Maintain habitat of biodiversity importance	Trees managed to minimise leaf input, siltation and pond water enrichment. Retain some overhanging branches creating dappled shade	5 yearly	Council
		Monitor aquatic and emergent vegetation; rake out excess growth to maintain 50% open water in autumn and retain on banks for 2 days before disposal	3 yearly; remove vegetation in autumn	Council
	Maintain aesthetic appearance	Removal of litter from pond P1 and surrounding area	5 times per year	Council
Fauna				
Bats: maintain suitable or better opportunities	Sensitive design of lighting in accordance with plan 11286/P10a (refer to "Plans" section of this document) and agreed specification	Lighting should be minimised along watercourse and boundary features (below 1 lux where possible). Baffled or directional lighting away from sensitive areas. To be agreed with ecologist.	Construction phase	Council / Developer / Ecologist
	Installation of bat boxes	15 of Schwegler Bat Box 2F to be erected on trees in parkland; siting to be agreed with ECoW	Parkland construction phase	Council / ECoW
		Monitor bat boxes	Year 1,3 and 5, May to September	Council / Ecologist

Rationale	Management Prescription	Detail	Timing / Frequency	Responsibility (bold denotes lead responsibility)
Birds: maintain and enhance opportunities	Avoid harm to nesting birds	Management of woody vegetation to be undertaken sensitively. Avoid nesting bird season (March to August) or precede by a check by an ecologist to confirm no active nests are present	Avoid March to August	Council / Ecologist
	Provide additional nest sites	Erect 20 nest boxes on retained trees, to be sited by ecologist	Parkland construction phase	Council / Ecologist
Reptiles: maintain and enhance opportunities	Maintain suitable habitat where currently exists	Retain a 3-5m strip of unmown grassland as shown on Plan 11286/P11 and allow to become tussocky. Remove scrub annually.	Annual	Council
	Create hibernacula	Arisings from initial tree works to be retained as log piles within unmown grassland strip at locations agreed with ECoW	Parkland construction phase	Council / Ecologist

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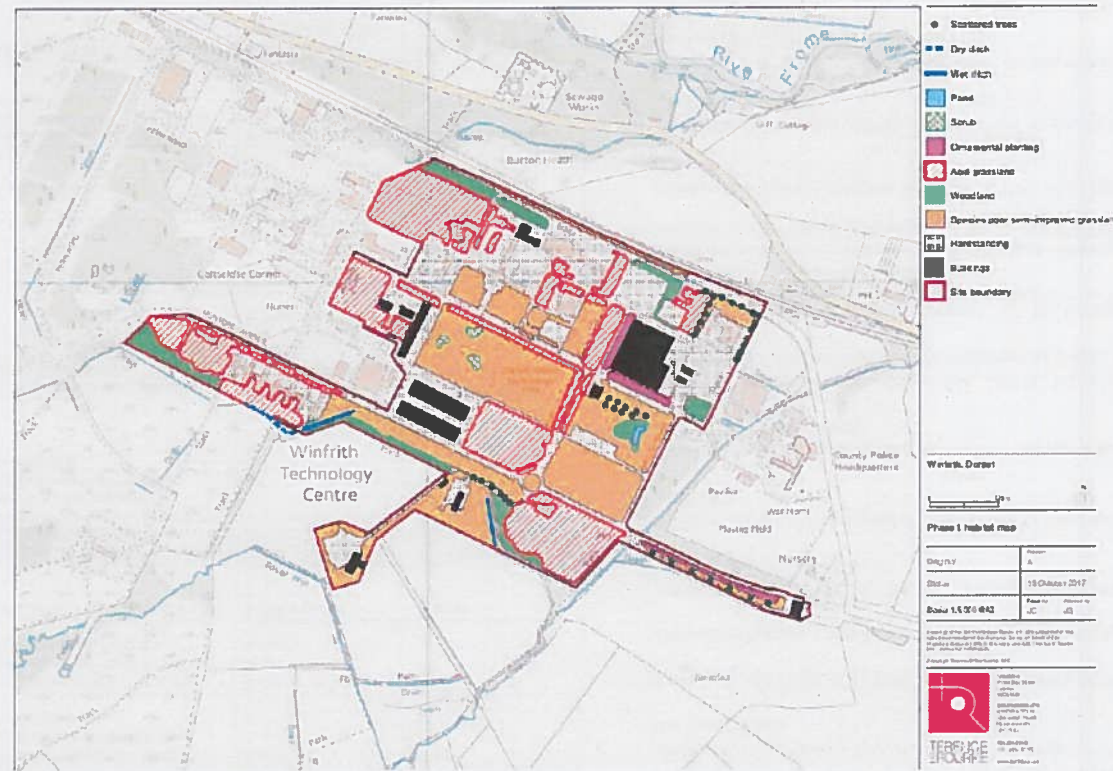
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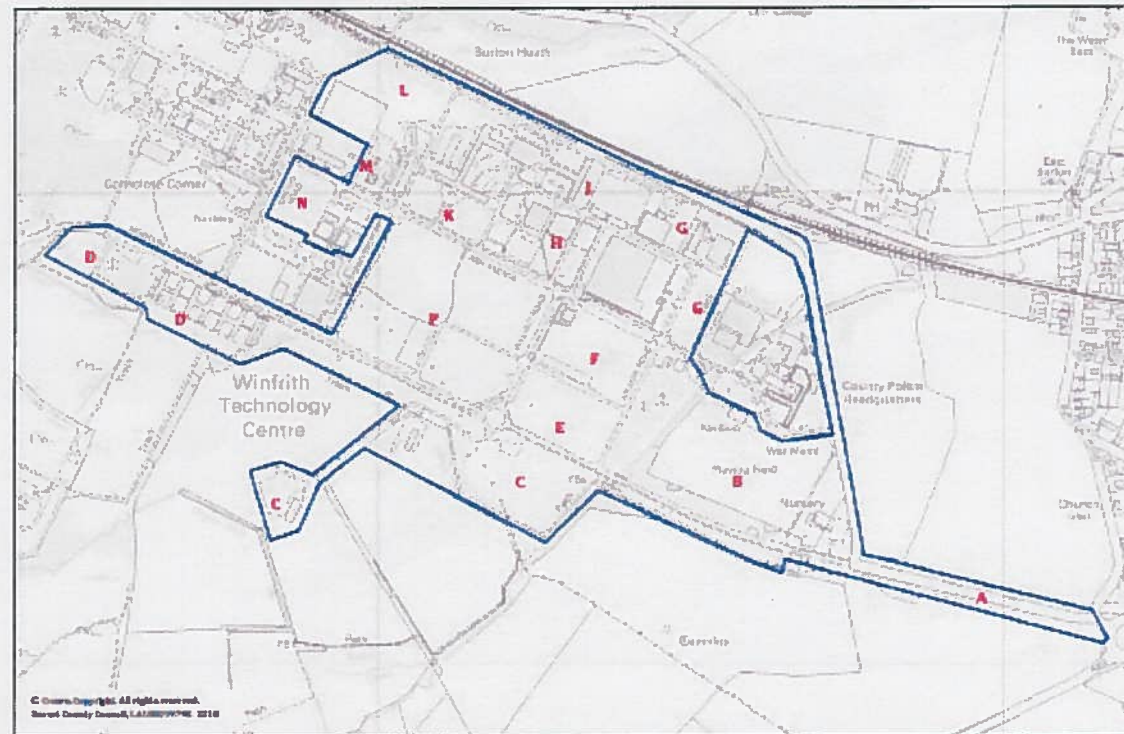
Appendix 1: Phase I Habitat map (Lindsay Carrington Ecological Services, 2017)



Dorset Innovation Park,
Landscape and Ecological Management Plan

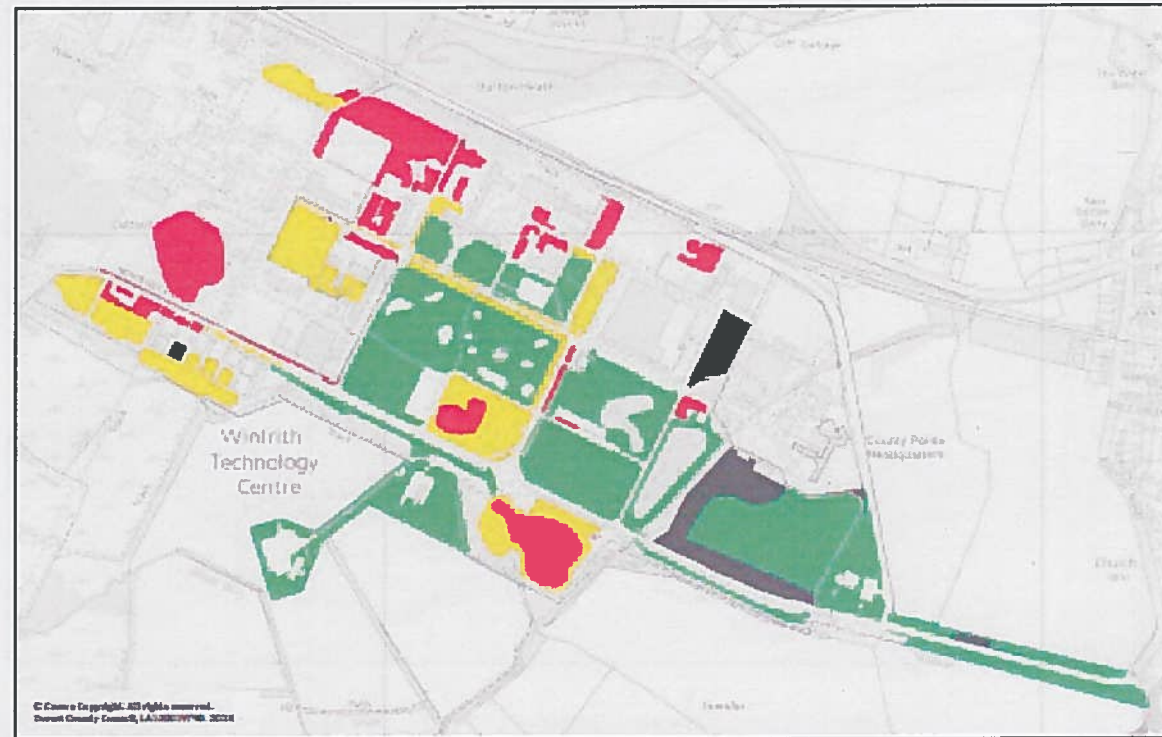
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Appendix 2: Botanical survey: area of survey and compartment numbers (Edwards, B., 2018).

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Appendix 3: Areas of grassland assessed in 2018 (Edwards, B., 2018)

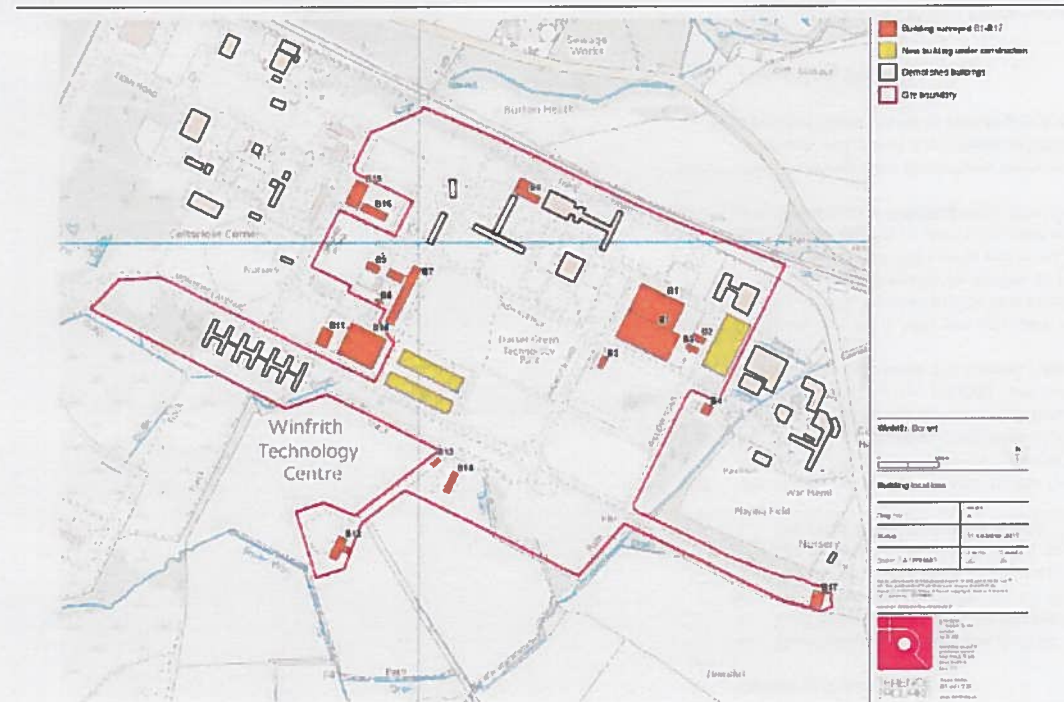


Red = High Quality; Yellow = Moderate Quality; Green = Low Quality; Black = destroyed since 2016; Grey = not assessed 2019

Dorset Innovation Park,
Landscape and Ecological Management Plan

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Appendix 4: Building Locations (Lindsay Carrington Ecological Services, 2017)



Dorset Innovation Park,
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Appendix 5: Legislation and Planning Policy

Appendix 5: Legislation and Planning Policy

- A5.1. This section summarises the legislation and national, regional and local planning policies, as well as other reference documents, relevant to the protection and enhancement of ecology resources.

Legislation

- A5.2. Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017;
- The Countryside and Rights of Way Act 2000;
- The Natural Environment and Rural Communities Act 2006;
- The Hedgerows Regulations 1997; and
- The Protection of Badgers Act 1992.

- A5.3. The European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992, often referred to as the 'Habitats Directive', provides for the protection of key habitats and species considered of European importance. Annexes II and IV of the Directive list all species considered of community interest. The legal framework to protect the species covered by the Habitats Directive has been enacted under UK law through The Conservation of Habitats and Species Regulations 2017 (as amended).

- A5.4. In Britain, the WCA 1981 (as amended) is the primary legislation protecting habitats and species. SSSIs, representing the best examples of our natural heritage, are notified under the WCA 1981 (as amended) by reason of their flora, fauna, geology or other features. All breeding birds, their nests, eggs and young are protected under the Act, which makes it illegal to knowingly destroy or disturb the nest site during nesting season. Schedules 1, 5 and 8 afford protection to individual birds, other animals and plants.

- A5.5. The CRoW Act 2000 strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to 'recklessly' disturb a protected animal whilst it is using a place of rest or shelter or breeding/nest site.

Planning Policy

National Planning Policy Framework

- A1.1. The National Planning Policy Framework (NPPF) was published in July 2018 and sets out the Government's planning policies for England and how these should be applied. It replaces the first National Planning Policy Framework published in March 2012.
- A1.2. Paragraph 11 states that:



"Plans and decisions should apply a presumption in favour of sustainable development."

- A1.3. Section 15 of the NPPF (paragraphs 170 to 177) considers the conservation and enhancement of the natural environment.
- A1.4. Paragraph 170 states that planning and decisions should contribute to and enhance the natural and local environment by:
- a) *"protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
 - b) *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; and*
 - d) *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures"*
- A1.5. Paragraph 171 states that plans should distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.
- A1.6. Paragraph 174 states that in order to protect and enhance biodiversity and geodiversity, plans should:
- a) *"Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
 - b) *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."*
- A1.7. When determining planning applications, Paragraph 175 states that local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:
- a) *"if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
 - b) *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*

- c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁵⁸ 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."*

- A1.8. As stated in paragraph 176 the following should be given the same protection as habitats sites:
- a) *"potential Special Protection Areas and possible Special Areas of Conservation;*
 - b) *listed or proposed Ramsar sites; and*
 - c) *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."*
- A1.9. Paragraph 177 states that the presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined.
- Office of the Deputy Prime Minister (ODPM) Circular 06/2005: Biodiversity and Geological Conservation - Statutory Obligations and their Impact within the Planning System*
- A1.10. ODPM Circular 06/05 was prepared to accompany PPS9, however continues to be valid, and material in the consideration of planning applications since PPS9's replacement by the NPPF.
- A1.11. ODPM Circular 06/05 provides guidance on applying legislation in relation to nature conservation and planning in England. Part I considers the legal protection and conservation of internationally designated sites (namely candidate Special Areas of Conservation (cSACs), SACs, potential Special Protection Areas (pSPAs), SPAs and Ramsar sites) and Part II considers the legal protection and conservation of nationally designated sites, namely Sites of Special Scientific Interest (SSSIs).
- A1.12. Part III considers the protection of habitats and species outside of designated areas (particularly UK Biodiversity Action Plan species and habitats, which it states are capable of being a material consideration in the preparation of local development documents and the making of planning decisions.
- A1.13. Part IV considers species protected by law and states that the presence of a protected species is a material consideration in the consideration of a development proposal that, if carried out, would be likely to result in harm to the species or its habitat and that it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted.

Local Planning Policy

Purbeck District Council Local Plan – adopted November 2012.

Biodiversity and Geodiversity

- Purbeck has a wealth of biodiversity and geodiversity of international and national importance, e.g. heathlands, Jurassic Coast World Heritage Site. As these sites are afforded statutory protection through specific legislation and there is no need to repeat the legislation within the Purbeck Local Plan. The designations (including Special Protection Area (SPA), Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI), Ramsar and National Nature Reserves (NNR)) will however be carried forward onto the Proposals Map from the Purbeck Local Plan Final Edition Proposals Map (2004).
- Species and habitats of local importance are identified within the Dorset Biodiversity Strategy and Biodiversity Action Plan for Purbeck. Other local biodiversity interests lie within Sites of Nature Conservation Interest (SNCIs), Local Nature reserves (LNRs), and habitats and species of principal importance to biodiversity, including Ancient Woodland and veteran trees. SNCIs will be carried forward onto the Proposals Map from the Purbeck Local Plan Final Edition Proposals Map 2004.
- Heath and forest areas outside of SPA and SAC also support protected Annex 1 bird species. If they support more than 1% of the British population of a bird species they are applicable for SPA status. In Purbeck there are four areas at Rempstone, Hethfelton, Wareham Forest and Moreton that support nightjar and woodlark that are not yet protected. Therefore, for any development in these areas, the Council will have to adopt a risk based approach to ensure that there will not be an adverse effect on protected species.
- In 2012, work on the Wild Purbeck project led to the designation of Purbeck District as a Nature Improvement Area (NIA). The NIA includes a variety of projects that will improve biodiversity and resilience to climate change.
- The restoration of former minerals sites will also contribute to improving biodiversity

Spatial Objective 3: Conserve and enhance Purbeck's natural habitat

A5.6. Policy BIO: Biodiversity & Geodiversity

Purbeck's biodiversity and geodiversity will be protected, managed and enhanced through:

- The promotion of Strategic Nature Areas as identified on the Nature Map (Map 3);
- Efforts to enhance, link and create habitats to enable adaptation to climate change;
- Projects associated with the Purbeck Nature Improvement Area and the achievement of 'Wild Purbeck';
- Encouraging development proposals to incorporate biodiversity having regard to District design guidance;
- Maintaining regionally important geological and geomorphological sites (RIGS) for their scientific and educational value; and
- Allowing natural processes to continue along the coast in order to protect any wildlife and geological features maintained by active erosion, as reflected in the Shoreline Management Plan policy.

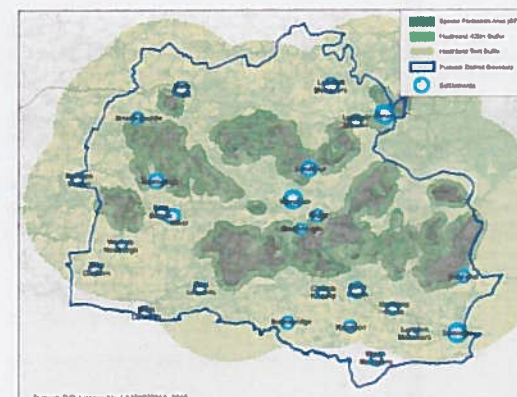
New Development

A5.7. New Development:

- Will need to ensure that there are no adverse effects upon the integrity of European protected sites (SPA, SAC, Ramsar, possible SAC, potential SPA).
- Within the vicinity of areas that support nationally significant numbers of Annex 1 bird species (nightjar and woodlark), undertake a risk-based approach to ensure that there is no significant adverse effect upon these species and their habitats.
- Will need to ensure that there are no adverse impacts upon SSSI, for example an indirect effect of disturbance from increased public access.
- Will need to demonstrate that it avoids significant adverse impacts upon Sites of Nature Conservation Interest (SNCI), National Nature Reserves (NNR), Local Nature Reserves (LNR), Ancient Woodland, aged or veteran trees, wetland interests (for example, watercourses, ponds, reedbeds), and Habitats of Principal Importance. Any significant adverse impacts on these sites and features which cannot be avoided through location on an alternative site, must be adequately mitigated, or, as a last resort, compensated. Should incorporate any opportunities for biodiversity in and around the development

In considering the acceptability of proposals, the Council will assess their direct, indirect and cumulative impacts relative to the significance of the nature conservation value and balance them against other sustainable development objectives.

Map 17: 5km and 400metre Heathland Buffer



Spatial Objective 3: Conserve and enhance Purbeck's natural habitat

A5.8. Policy DH: Dorset Heaths International Designations

Development will not be permitted unless it can be ascertained that it will not lead to an adverse effect upon the integrity, of the Dorset Heaths' International designations.

The Council is jointly preparing a Heathlands DPD with affected neighbouring authorities to set out a long-term mitigation strategy to ensure that the growth planned for South East Dorset can be accommodated without having an adverse effect upon the integrity of the Dorset Heaths.

This policy will apply until the Heathlands DPD supersedes it:

The following forms of development (including changes of use) will not be permitted within a 400m buffer around protected heathland:

- *Residential (C3) development that would involve a net increase in dwellings*
- *Tourist accommodation including hotels, guest houses, boarding houses, bed and breakfast accommodation, tented camping and caravans which require planning permission (C1 uses) and self-catering tourist accommodation; and*
- *Equestrian-related development that may directly or indirectly result in an increased adverse impact on the heathland.*

Between 400 metres and 5km of a heathland, new residential development and tourist accommodation will be required to take all necessary steps on site to avoid or mitigate any adverse effects upon the internationally designated site's integrity or, where this cannot be achieved within the residential development, to make a contribution towards mitigation measures designed to avoid such adverse effects taking place. Measures will include:

- *Provision of open space and appropriate facilities to meet recreation needs and deflect pressure from heathland habitats;*
- *Heathland support areas;*
- *Warden services and other heathland/harbour management;*
- *Access and parking management measures; and*
- *Green infrastructure.*

Biodiversity Action Plans

- A5.9. The UK Post-2010 Biodiversity Framework succeeded the UK BAP partnership in 2011 and covers the period 2011 to 2020. However, the lists of Priority Species and Habitats agreed under the UKBAP still form the basis of much biodiversity work in the UK. The current strategy for England is 'Biodiversity 2020: A Strategy for England's wildlife and ecosystem services' published under the UK Post-2010 UK Biodiversity Framework. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed for the UK BAP remain valuable resources for background information on priority species under the UK Post-2010 Biodiversity Framework.
- A5.10. Priority Species and Habitats identified under the UKBAP are also referred to as Species and Habitats of Principal Importance for the conservation of biodiversity in England and Wales within Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006. The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

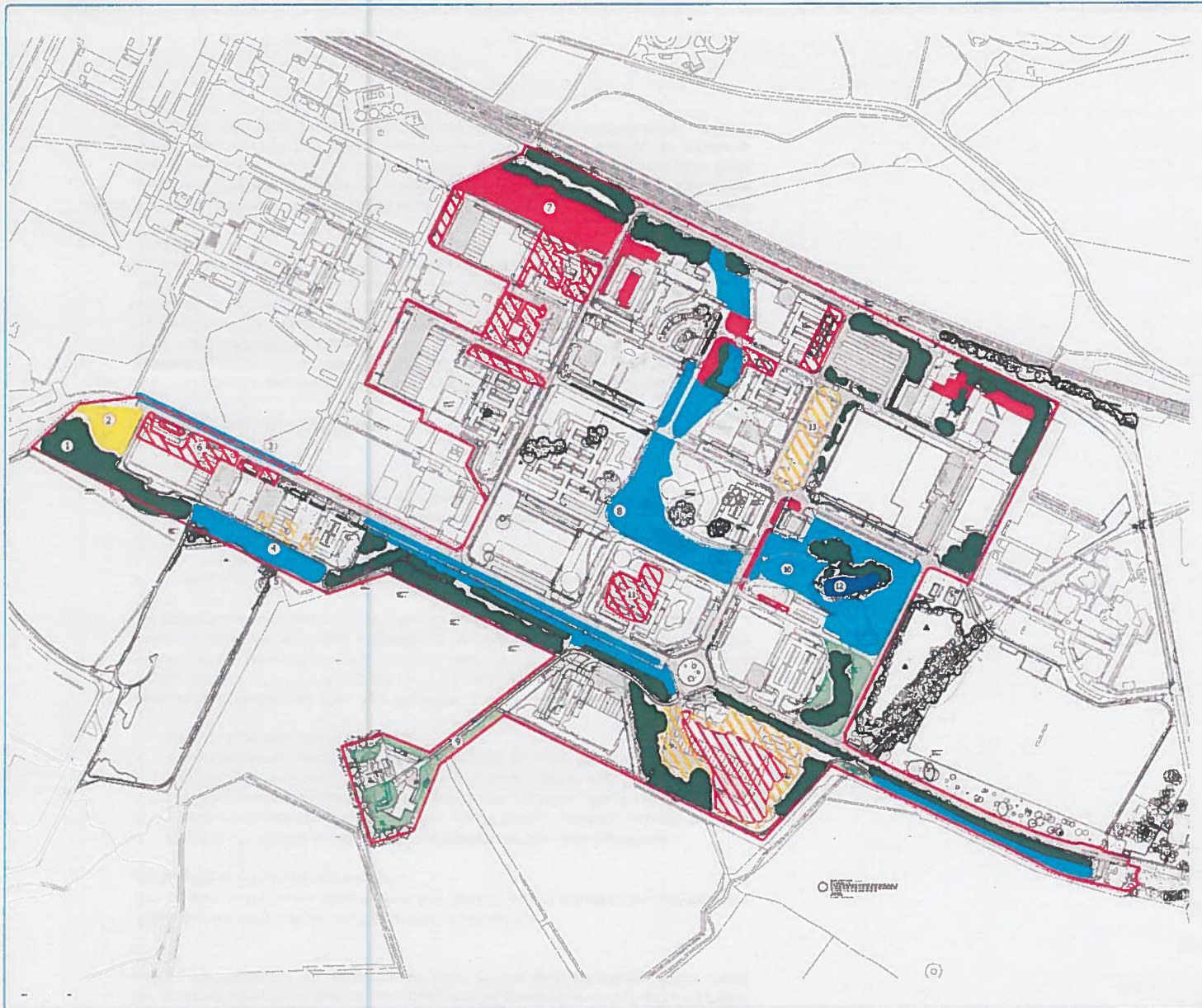
Plans

Ecological Mitigation and Enhancement Strategy 11286/P09c

Lighting Plan Proposals 11286/P10a July 2018

Habitats to be Managed for Reptiles Plan 11286/P11 June 2018





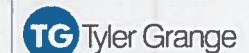
- LDO Boundary
- Retained and managed high importance grassland
- ▨ Translocated high importance grassland
- Retained and managed moderate importance grassland
- ▨ Translocated moderate importance grassland
- Receptor for translocated grassland
- Existing low importance grassland managed to enhance
- Existing woodland and trees; thinned and managed to prolong longevity; non-natives removed
- Existing pond enhanced by removal of trees and planting of submerged and emergent native flora
- ① Management prescription (MP) - refer to LEMP text

Notes:

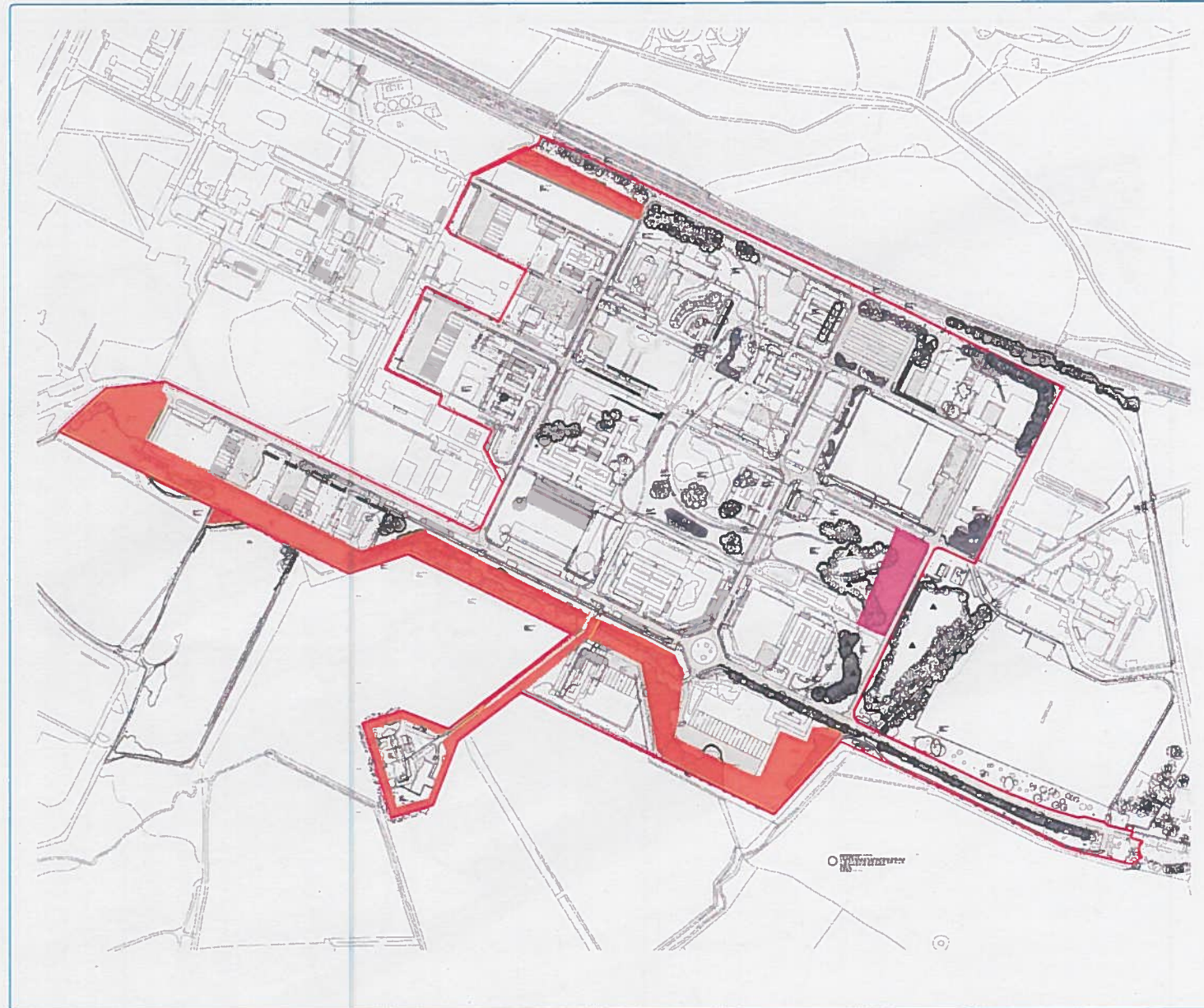
- Location of grassland translocation receptor areas is indicative; all are within parkland controlled by the Council
- The ecological mitigation within the parkland to be delivered as an enabling works phase (which should be completed in sub-phases)
- Individual development plots to incorporate biodiversity in accordance with measures proposed in LEMP and Design Guide
- Existing management regime for grassland (as specified in LEMP) to continue in lieu of impacts resulting from future development; arisings composted in designated area or removed



Project Dorset Innovation Park LDO
 Drawing Title Ecological Mitigation and Enhancement Strategy
 Scale As Shown (Approximate)
 Drawing No. 11288/P09C
 Date July 2018
 Checked PW/JA



Unit House, Rye, Sussex, GU8 5BY
 T: 01432 765 000 E: info@tylgrange.co.uk W: www.tylgrange.co.uk



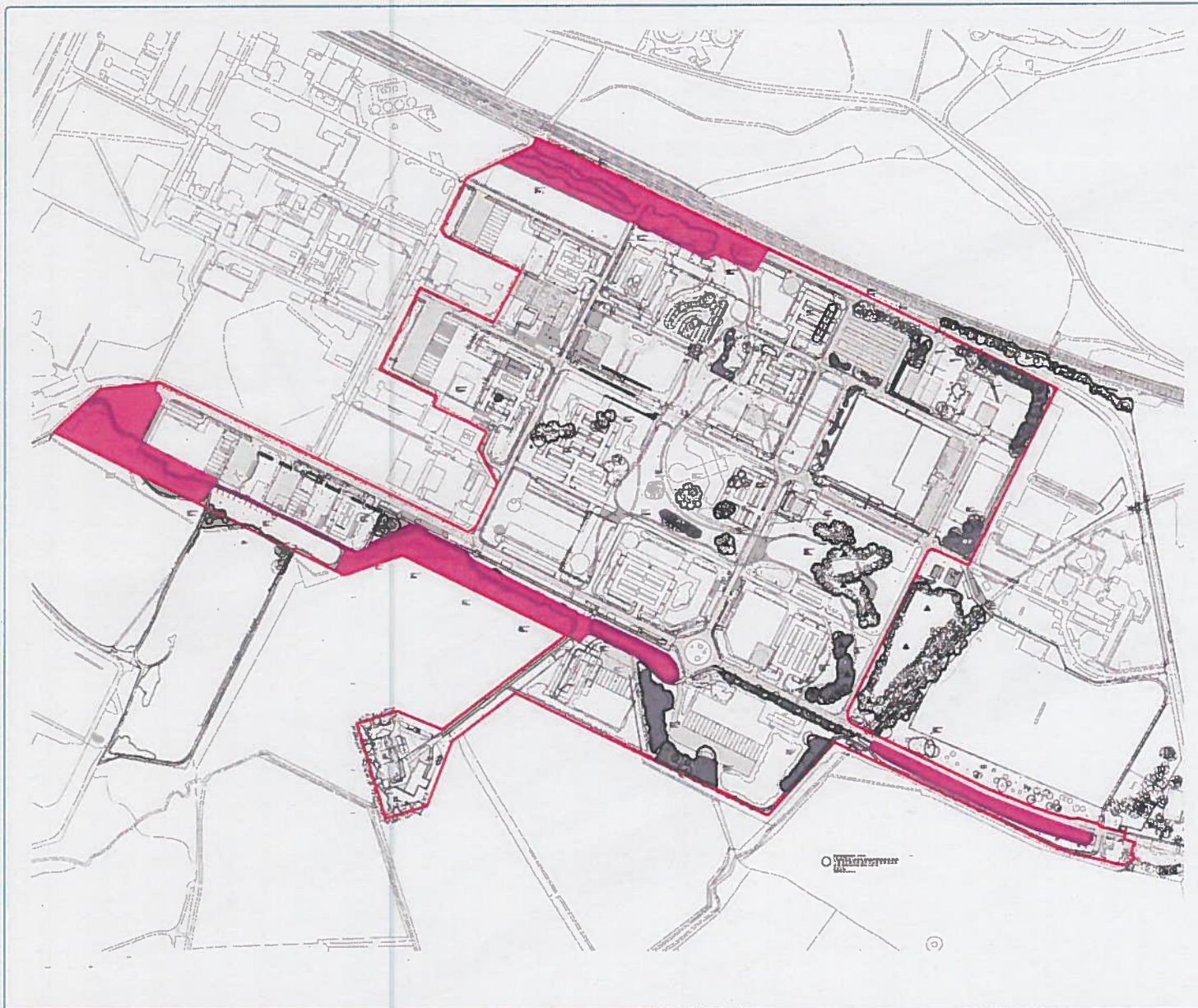
- Site boundary
- Existing dark corridors retained (<0.5 lux)
- Existing lux levels to be reduced (<0.5 lux)

N 0 150 m

Project Dorset Innovation Park LDO
 Drawing Title Lighting Strategy for Bats
 Scale As Shown (Approximate)
 Drawing No. 11286/P10A
 Date July 2018
 Checked LB/HM

TG Tyler Grange

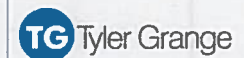
Leon House, Rowcroft, Stroud, Gloucestershire GL8 3BY
 T: 01453 765 500 E: info@tylergrange.co.uk W: www.tylergrange.co.uk



- Site boundary
- Habitats where reptiles recorded during surveys
- Habitats to be managed for reptiles

N 0 150 m

Project Dorset Innovation Park LDO
 Drawing Title Habitats to be managed for reptiles
 Scale As Shown (Approximate)
 Drawing No. 11286/P11
 Date June 2018
 Checked LB4-M



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