Part 1:
Environmental Action Plan

Land South and East of Adastral Park, Ipswich, Suffolk

On Behalf of:
Carlyle Land Ltd. and Commercial Estates Group

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Contents:

Tables:

1.0 Introduction

1.1 This report sets out the Part 1: Environmental Action Plan in relation to the planning application (reference DC/17/1435/OUT) for 2,000 dwellings, an employment area of 0.6ha, primary local centre etc. at land South and East of Adastral Park, Martlesham Heath, Martlesham, Suffolk ("the site"), in response to the Natural England (NE) consultation response (reference 213665, dated 11th May 2017). This stated:

> *The proposals set out in the Shadow Habitat Regulations Assessment (Baker Consultants, 2017), and the Geodiversity Statement (Harrison Group Environmental, 2017) should be drawn together into a detailed environmental action plan which would then be conditioned as part of the application. The plan should also include:*
>
> 1. *Details of timing and phasing of the provision of green infrastructure, to ensure that adequate mitigation is in place as the development progresses.*
> 2. *Details of how the proposal will contribute to the wider Recreational Avoidance and Mitigation Strategy (RAMS) currently in development by Suffolk Coastal District Council (SCDC).*
> 3. *Details of how access for research and site maintenance to maintain an active geological exposure will be achieved for Waldringfield Pit SSSI, including adaptation space.*
>
> *It may also be helpful to bring together Landscape and Protected Species issues into the environmental action plan.*

1.2 SCDC has requested that the EAP be prepared in two parts as follows:

> ***Part 1: Environmental Action Plan***
> *Framework which will assist in framing any conditions attached to the planning permission.* The Framework would provide elucidation and clarification in the following respects:
>
> 1. *Qualitative assessment of proposed SANG provision;*
> 2. *Phasing of the different elements of SANG provision;*
> 3. *Phasing of Recreational Avoidance and Mitigation Strategy (RAMS) payment;*
> 4. *Outline of management regime;*
> 5. *List of further detail to be submitted following determination of the outline planning application covered by "prior to commencement of residential development phase" conditions; to include:*
>   a. *management of the geological SSSI, particularly in relation to the provision and maintenance of a stand-off distance/exclusion zone from roads and other infrastructure in relation to the stability and maintenance of the 'face' of the feature. It has been suggested that we involve Suffolk Geological Society and ensure that the exclusion zone is a minimum of 10 metres to allow for 0.5m to be 'cleaned' from the 'face' of the feature every 10 years as part of the maintenance of the geological SSSI;*
>   b. *landscape element;*
>   c. *planting scheme and method statement for restoration of heath, to include temporary rabbit proof fencing locations to enable heath, and planting of low disturbance areas, to establish;*
>   d. *lighting plan and lighting strategy to cover ecologically sensitive areas and/or areas where enhancements to biodiversity are important;*
>   e. *plans to identify suitable locations for breeding sites for swifts, house martins, starlings, house sparrows; and a section within Part 2 of the EAP committing to a*

certain percentage of different nest boxes provided throughout the residential areas, and, where appropriate, within the pill boxes and commercial areas;

f. *plans to identify suitable locations for bat roosting sites and a section within Part 2 of the EAP committing to a certain number of artificial bat roosts to be posited across the site.*

6. Other issues to be included are:

    a. *The details of sub-phasing of habitat creation and enhancement measures within each phase of delivery.*

Part 2: Environmental Action Plan

Detail to be submitted to discharge pre-commencement planning condition. To include the detail for each of the elements under 5 and 6 above.

1.3 SCDC has acknowledged that Martlesham Soakaway Acid Grassland county wildlife site (CWS) to the east of the A12 is outside the control of the applicant. However, SCDC has requested that proposals for the application site do not prejudice future integration of the CWS to provide connectivity between the application site and Barrack Square should SCDC, Suffolk County Council or the landowner of the CWS come forward with a strategy/proposal for it. SCDC has confirmed that this can be dealt with by way of a planning condition attached to the planning application.

1.4 This report deals with Part 1 of the Environmental Action Plan, and provides a framework for management of ecology, geology and landscape features. The report structure is as follows:

1. Introduction - introducing the purpose of the document (this section);
2. Summary Baseline – summary description of current conditions on site including ecology, geology and landscape;
3. Green Infrastructure Provision - proposals, aims and objectives;
4. Phasing of Green Infrastructure and SANGS delivery;
5. Qualitative assessment of SANGS provision;
6. Framework Environmental Action Plan – summary tables to provide a framework going forward in relation ecology, geology and landscape mitigation measures;
7. Recreational Avoidance and Mitigation Strategy (RAMS) contribution – setting out details of the financial contribution; and
8. Actions to be submitted prior to commencement of each residential development phase.

2.0 Summary Environmental Baseline

2.1 This summary is based on the reports submitted to form the Environmental Statement (CCL and CEG, 2017).

2.2 The site is located near Ipswich, Suffolk and consists of a large area of sand and gravel quarry, four large water bodies, arable farmland, woodland blocks, open grasslands, scrub and trees. The site is bordered by a golf course, industrial areas and farmland. The wider landscape consists largely of arable farmland.

Ecology

Statutory Designated Sites

2.3 Three European designated sites are located within 10km of the site:

- Deben Estuary Special Protection Area (SPA) and Ramsar designated for its wintering birds, invertebrates and plants.
- Sandlings and Sandlings Forest SPA designated for their heathland habitat and for its ornithological interest.
- Stour and Orwell Estuaries SPA and Ramsar, designated for its national importance to breeding and wintering birds as well as for the assemblage of vascular plants.

2.4 Eleven biological Sites of Special Scientific Interest (SSSIs) are located within 6km of the site boundary. The closest is Ipswich Heaths SSSI which sits approximately 800m from the western site boundary. It is designated for its extensive tracts of heathland / mosaic of heathland and acid grassland and contains the largest colony of silver-studded blue butterfly in East Anglia.

Non-statutory Designated Sites

2.5 Fourteen County Wildlife Sites (CWS) are located within 2km of the site boundary including one adjacent to the north-west boundary. Martlesham Soakaway Acid Grassland CWS is a high-quality, acid grassland maintained by rabbit grazing and supports a common lizard population.

Protected and Notable Habitats and Flora

2.6 Biodiversity Action Plan (BAP) habitats are present on site:

- Open Mosaic Habitat on Previously Developed Land
- Lowland Mixed Deciduous Woodland
- Open Standing Water

2.7 Further habitats of biodiversity value include the dense and scattered scrub habitats, mature trees and some buildings on site (the last for roosting bats). In addition, seven notable and/or rare plant species are present on site within the open mosaic habitats.

Protected and Notable Fauna

2.8 Protected species on site include:

- Bats – wide variety of species using the site for foraging and commuting, including rare species. One tree and one building confirmed as roosting sites, and a further two buildings used for feeding perches;
- Birds – a wide variety of birds of conservation concern using the site for foraging, dispersing, breeding and overwintering;
- Badgers – multiple signs of badger foraging and dispersing around the site, including the working quarry areas, arable field boundaries, the bunds around the quarries, and particularly, along the southern corridor and field to the north of the quarry complex. A limited number of outlier/subsidiary badger setts are present on site;
- Reptiles - low numbers of common lizard and grass snake utilising discrete patches of grassland in the west and south of the site;
- Invertebrates – diverse invertebrate assemblage utilising the open and bare ground habitats around the site, particularly on the bunds of the quarry; and
- Small and medium-sized mammals – presence of European hedgehog within scrub and grassland habitats.

Geology

Statutory Designated Sites

2.9 There is one geological SSSI (SSSI), Waldringfield Pit, located within the site and within an active quarry currently operated by Brett Aggregates located at Ordnance Survey Grid Reference TM260449. This site covers an outcrop of granular soils which form a cutting within the quarry and covers a relatively small area of approximately 774m^2. The outcrop is approximately 100m in length by 8m in height.

Landscape

Landscape Designations

2.10 The site is not subject to any national or local landscape designations, however, the Suffolk Coastal and Heaths Area of Outstanding Natural Beauty (AONB) lies to the east of the site, at approximately 90m to the east at the closest point. Further to the south of the site lies a Special Landscape Area which lies approximately 450m to the south at the closest point.

2.11 To the east of the application site, the AONB is identified within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty: Management Plan 2013 – 2018 as falling within the 'Estate Sandlands' Landscape Character Type, which comprises large areas of lowland heath, with the western edge including ancient woodlands and historic parklands. Settlements within the Estate Sandlands comprise small villages and scattered estate farms.

2.12 The site is not situated within a landscape designated for its landscape value. The Landscape and Visual Impact Assessment contained at Chapter 11 of the Environmental Statement (March 2017) submitted with the planning application includes a detailed assessment of the landscape of the site and its local context. This includes an assessment of landscape factors and value indicators, as set-out at Box 5.1 of the GLVIA3 guidance document. This has been used to demonstrate that the site is of 'Ordinary' character in relation to physical attributes and therefore is not a 'Valued Landscape' as considered at paragraph 109 of the National Planning Policy Framework (NPPF) (DCLG 2012).

3.0 Green Infrastructure Provision

3.1 SCDC suggested that the EAP considers the qualitative assessment and phasing of Suitable Alternative Natural Green Space (SANGS), however other elements of green infrastructure contribute to the creation of an attractive, useable and biodiverse place. Proposed green infrastructure has been considered collectively during the evolution of the proposals. The following section therefore deals with SANGS and wider green infrastructure provision. However, to keep the assessment transparent it identifies where elements contribute to SANGS and other which are outside the SANGS calculation[1].

3.2 The creation of attractive, convenient and useable SANGS and other green infrastructure has been a guiding principle that has influenced the evolution of the proposed development. Special consideration has been given to both the quality of open spaces and the connectivity between them, as to deliver proposals that provide a rich, memorable and varied experience for users. Furthermore, the importance of SANGS provision has been embraced by the applicants and expressed through their commitment to providing greater detail on this and related elements of the proposals than would normally be the case with an outline planning application.

3.3 The strategy for green infrastructure is to create a framework based on the site's existing features, the main elements of which comprise Spratt's Plantation in the north and the centrally located lake. Both features possess at least four common attributes: i) aesthetically attractive; ii) established/mature, providing a sense of place; iii) valuable from a biodiversity perspective; and iv) potential for enhancement. These existing site features provide the opportunity to connect two distinct habitats.

3.4 The retained habitats provide the opportunity to create a contiguous area of main green infrastructure by creating an area of heathland between the woodland and lake. Lowland dry heathland is a high biodiversity value habitat and one that is associated with coastal Suffolk and the once widespread Sandlings heaths. It offers the opportunity to support the conservation of rare animal species, such as the silver-studded blue *Plebejus argus* butterfly that is present on fragmented heathland sites nearby.

3.5 Several reports submitted in support of the planning application identify and evaluate the habitat and features which currently exist. Other features which further influenced the green infrastructure strategy underpinning the proposals, were: tree belts on the southern and eastern boundaries of the site; a network of on-site public rights of way (PRoW) adjacent to the southern, eastern and part of the north and western boundaries of the site; and designated and non-designated heritage assets.

3.6 Mapping the above features and adding information in relation to habitats and species provided the opportunity to create and enhance a range of distinct character areas within the overall green infrastructure provision. Broadly the strategy is twofold. Firstly, it seeks to establish a continuous corridor from Spratt's Plantation, through the central lake area, then west to connect the scheduled monuments in Spratt's Plantation with the scheduled monument and non-designated heritage assets in the western part of the site. Secondly, it seeks to utilise and where appropriate upgrade the north-south PRoW, which traverses the site (connecting to a wider network of off-site routes) with the site's southern boundary.

[1] Calculation of SANGS and other green infrastructure provision can be read in the SHRA and Planning Statement.

3.7 Chapter 5: Design and Placemaking of the Design and Access Statement (DAS) submitted in support of the planning application, identifies the components referred to above and sets out the principles against which future reserved matters application will be judged. The planning application also includes the following documents and drawings which should be read in conjunction with the DAS and this EAP:

- Site Features Plan – drawing 31677 06;
- Illustrative Framework Masterplan – drawing 31677 08;
- Green Infrastructure – drawing 31677 09;
- Play Approach – drawing 31677 10;
- Main Green Infrastructure Area – drawing 31677 11;
- Heritage Park – drawing 31677 12;
- Character Banding Plan – drawing 31677 13;
- Geodiversity Statement;
- Earthworks Strategy Plan (Preliminary) – drawing 10391-EW-01;
- Footpath/Cycleway/Bridleway Statement;
- Arboricultural Impact Assessment (report and drawings)
- Environmental Statement, in particular:
  - Parameter Plan 1: Land Use and Green Infrastructure;
  - Chapter 7: Archaeology and Built Heritage
  - Appendix D
  - Chapter 8: Ecology
  - Appendix E1: Ecological Assessment
  - Appendix E2: sHRA
  - Chapter 11: Landscape and Visual Impact
  - Appendix H
  - Chapter 17: Draft Environmental Management Plan

3.8 The purpose of this EAP: Part 1 is to provide the context for and a qualitative assessment of the proposed green infrastructure provision. The following section should be read in conjunction with the SANG parameters agreed between the applicants and Natural England (refer to correspondence dated 6 December 2016 and 5 January 2017 respectively) Appendix 1 of the Shadow Habitats Regulations Assessment which is Appendix E2 of the Environmental Statement.

4.0 SANGS Provision, Phasing and Outline Management Regime

4.1 The proposed provision of green infrastructure can be broken down into the following components (refer to drawing Green Infrastructure Phasing 31677 17 for location of these). The main green infrastructure comprises Spratt's Plantation, Heathland and Lake.

Table 1: SANGS and Green Infrastructure Provision

Ref	Area	SANGS/Other Green Infrastructure
	Main Green Infrastructure(MGI)[2]	
1	a) Spratt's Plantation;	Contributes to SANGS calculation
2	b) Heathland; and	Contributes to SANGS calculation
3	c) Lake	Contributes to SANGS calculation
	Other Green Infrastructure	
4	Heritage Park[3]	Partial contribution to SANGS calculation
5	SANGS link 1 (between MGI and Heritage Park)	Contributes to SANGS calculation
6	Valley Corridor	Contributes to SANGS calculation
7	South-east corner	Contributes to SANGS calculation
8	SANGS link 2 (southern boundary of the site)	Contributes to SANGS calculation
9	SANGS link 3(eastern boundary of the site)	Contributes to SANGS calculation
10	SANGS link 4 (western boundary and parallel to A12)	Contributes to SANGS calculation
11	Allotments/community orchards	Does not contribute to SANGS calculation
12	Formal recreational open space adjacent to school site (and adjacent SSSI)	Does not contribute to SANGS calculation

4.2 Drawing 31677 17: Green Infrastructure Phasing identifies the phases for delivery of green infrastructure. Triggers for delivery, proportionate with the occupation of the new homes on site, will be set out in a phasing programme prior to commencement of development and secured by way of planning conditions or planning obligation.

4.3 The following paragraphs provide the framework for each of the components set out in the table above. The approach is consistent with Appendix 15: Ecological Mitigation Masterplan appended to the Ecological Assessment (Appendix E1 of the Environmental Statement); pages 64-75, 84 and 90-93 of the DAS; drawing 31677 10: Play Approach, drawing 31677 11: Main Green Infrastructure Area and drawing 31677 12: Heritage Park, submitted in support of the planning application.

4.4 To create high quality and enduring green infrastructure within the site, a detailed programme of planting schedules, method statements, public access and maintenance will be provided by Part 2 of the EAP for each of the component areas. Habitat creation and management will take account of the Earthworks Strategy Plan (Preliminary) (drawing 10391-EW-01) within the Land Stability Report (Brookbanks Consulting, March 2017).

Spratt's Plantation

4.5 The canopy consists of even-aged oak and sycamore, with a bramble and bracken understorey. The woodland provides foraging habitat for bat species, including the rare barbastelle bat. The objectives for this woodland area are to increase the species diversity through native species planting and *ad hoc* removal of invasive sycamore trees and saplings.

[2]refer to drawing 31677 11 E submitted in support of the planning application
[3]refer to drawing 3177 12 H submitted in support of the planning application

4.6 Opening of rides and walkways may also encourage shade-tolerant, woodland ground flora to establish as well as increase structural diversity. No lighting will be implemented within the woodland and a sensitive, low level lighting scheme will be implemented around the woodland edges where it will back onto the new residential areas, ensuring the woodland edges are not lit.

Heathland

4.7 The newly created lowland dry heathland dominated by heathers, especially bell heather, will provide optimal habitat for notable plant species, reptiles and invertebrate species of sparsely vegetated ground, as well as retain and enhance an important foraging corridor for nightingales. A restoration target in the medium to long term after the establishment of lowland dry heathland will be the silver-studded blue butterfly, which is present nearby at Martlesham Heath.

4.8 Wildflower meadows, as well as patches of neutral/acid grassland and sparsely vegetated ground will also be created here for the benefit of reptiles, invertebrates and notable plants.

4.9 Low nutrient spoil on site derived from the quarrying activities, for example in existing bunds, may provide a substrate on which heathland is restored. Soil tests will be carried out to confirm the best available source material.

4.10 An area incorporating heathland and the northwest part of the lake (refer to page 67 of the DAS) will be designated as a 'low disturbance zone' where recreational access is restricted to allow species sensitive to disturbance, such as sand martin, nightingale, skylark, reptiles and badgers to be retained on site.

4.11 Management will be sensitive to the species that will utilise the area, such as cutting on rotation with arisings removed. Management will include reinforcing the scrub and thorny native species around the edge of this zone, to naturally deter access to these areas. The scrub will be cut on rotation to prevent it from encroaching on the heathland and retained trees will be managed by retaining any dead wood *in situ* providing habitat for bats and invertebrates. The heathland in this area will have no paths cut though it to further deter access to these areas.

Lake

4.12 This area will predominantly be recreational; however, a marginal wetland habitat will be created around the margins of the lake to enhance the biodiversity value in this area. In addition, a wildlife amenity seed mix will be planted to ensure the biodiversity value of this area is not lost. A marginal wetland habitat will be incorporated around the margins of the lake to enhance its value for biodiversity. In addition, a low-level lighting scheme will be implemented.

Heritage Park

4.13 The alignment of the SANGS links is such that it traverses the heritage park and in so doing creates an attractive and more formal park style that will both deliver important open green space but also provide a sympathetic setting for the heritage assets. The variation in character of the SANGS links adds interest and helps to navigate uses through the series of different spaces.

4.14 Two pill boxes are located within the heritage park area. The proposals will enhance this area for bats to provide additional roosting opportunities. The pill boxes have the potential to be utilised by roosting bats with some minor enhancements; wooden boards for perching and roosting, as well as blocking the doorways and windows to create a darker space that is unlikely to be disturbed.

SANGS link 1 (between main green infrastructure and Heritage Park)

4.15 A high quality green route connecting the main area of green infrastructure to the western edge of the site bordering the A12 via the heritage park will be created. The scheduled monument provides a high quality focal point for the SANGS and adds furthers interest and variety to the open spaces and recreational routes. In particular, the link provides a seamless connection between key green spaces across the wider site.

4.16 In addition, planting of a native species-rich hedgerow along the new greenway will provide an enhancement for bats that can utilise the hedgerow for commuting and foraging. The hedgerow will include species beneficial to bats i.e. night-scented species such as honeysuckle. This mitigation is also considered suitable for hedgehogs that may be utilising the site.

Valley Corridor

4.17 An area of grassland currently supporting rare and notable plant species (which will be translocated as soils are subject to disturbance through reprofiling works) and scrub, with suitable habitat for reptiles will provide a continuation of existing reptile and notable plant habitat and enhancement through management and habitat creation (i.e. hibernacula and log piles). Habitats will include areas of species-rich grassland (acid/neutral) with scrub mosaic managed on a 3-5 year cutting rotation, and an area of sparsely vegetated ground for notable invertebrate species. The bare patches of soil will allow both reptiles to bask as well as invertebrates to shelter. The bare patches of soil will be suitable areas for higher levels of disturbance by walkers and cyclists, and steep banks facing south.

South-east Corner of Site

4.18 This area of the site currently consists of an arable field of low biodiversity value. The aim for this area is to create a wildflower meadow. A native wildflower seed mix of native provenance will be sown, with management to include cutting on long rotation to allow the sward to grow long. This will allow connectivity around the site in a circular route and provide habitat for notable bird species such as skylark. Bare patches around the periphery will also be present for invertebrates that will require a higher level of disturbance.

SANGS link 2 (along the southern boundary of the site)

4.19 The southern boundary consists of plantation woodland, both broadleaved and coniferous. This boundary provides a dark corridor and foraging and commuting habitat, important for bats including Barbastelle. The aims for this area include ensuring a dark corridor persists post development, which will require buffer planting and no lighting directed on this corridor (noting that the public right of way/SANGS corridor will require some lighting so that it is perceived to be safe by users). Due to the presence of a potential Barbastelle roost, the highway will remain unlit. These recommendations will also be suitable for badgers.

4.20 Structural planting will also take place providing structural diversity of benefit to notable bird and invertebrate species. Low light levels will be important here to allow continued connectivity from the southern boundary up to the woodland in the north particularly for bats.

SANGS link 3 (along the eastern boundary of the site)

4.21 At present, this green corridor provides ecological connectivity for wildlife. The tree lines provide shelter from the wind for bats and the scrubby successional habitats provide habitat for birds such as nightingale.

4.22 The aims for this corridor include providing a greater species and structural diversity through: sowing of a wildflower mix into grasslands, managing in a low intensity manner to provide gradation in structure; native species structural planting; and a low-level lighting scheme, which will prevent fragmentation for species using these commuting / foraging corridors between the woodlands on site and those off-site in the north and south.

SANGS link 4 (western boundary parallel to A12)

4.23 This green corridor provides connectivity for wildlife and a buffer to the A12 highway. The ecological aim is to provide structural diversity and as far as is feasible low light corridor on the site edge. Because of its proximity to the A12 the SANGS links at this point will have specific noise attenuation features, such as banking and new planting. This will give it a different character and appearance to the more naturalistic links and open spaces elsewhere on the site, and in so doing it will play an important gateway role by effecting the transition from the A12 outer edge into the green heart of the site.

Allotments/Community Orchards

4.24 Drawing 31677 17: Green Infrastructure Phasing identifies the locations of the two allotment/community orchard proposed as part of the development.

4.25 The orchard will be formed with an understorey of neutral/acid grassland or wildflower meadow. Both the allotment and community orchard will have low level lighting. Both habitats will provide an important resource for birds and invertebrates.

Formal Recreation/Sports Ground

4.26 Managed principally as amenity grassland for formal recreation. Noting that Waldringfield SSSI is located on the northern boundary.

Site-wide SANGS Principles

4.27 Areas where roads will cross the SANGS areas will be designed to avoid fragmentation. Low lighting levels and reduced speed levels together with well-designed planting layouts will reduce risks of road traffic accidents and ensure that connectivity across the greenspace network is not lost for wildlife.

4.28 Enhancements for wildlife will include provision of bat and bird boxes and connectivity into and between gardens for hedgehogs as part of each detailed reserved matters application.

4.29 Drawing 31677 10: Play Approach identifies large and small trim trail activity zones and local landscaped areas of play within the main green infrastructure area (including Spratt's Plantation), the heritage park, the valley corridor, southern boundary and south-east corner. Footpaths, bridleways and areas around the play equipment will be cut to create short grassed areas.

Interpretation

4.30 Interpretation boards will inform the new residents of the importance of the habitat components including sensitive and protected/rare species and prevent disturbance as well as picking / trampling of notable plants.

4.31 A dedicated area for the off-lead exercise of dogs will be clearly indicated by signs and a circular walk (2.3km minimum length) will be waymarked throughout its length.

5.0 SANGS Qualitative Assessment

Natural England's Site Quality Checklist

5.1 Table 2 sets out the essential and desirable criteria for a proposed SANGS, according to Natural England (NE, 2008) and allows an objective assessment of the quality of the provision of SANGS. It identifies what is already present on the site ('Current') and what action is required to make the SANGS suitable ('Future'). The table shows that the proposed SANGS meets all the essential and desired criteria as set out by Natural England, apart from the provision of dedicated car parking space for visitors to the SANGS. This is because the SANGS proposed here, with the full agreement of SCDC, is intended for use by on-site residents. Residential dwellings and associated parking will be provided within 400m of the SANGS.

5.2 In every other respect, the proposed SANGS delivers all that is required by Natural England and, in many instances, goes over and above what is demanded. For instance (and as set out in detail in the table below), on top of the required 2.5km circular walk there will be a longer (6km) circuit on offer from the beginning; the SANGS will include a wide variety of landscapes - including a newly recreated area of lowland heath that is an increasingly scarce habitat that is highly valuable to wildlife; and it is proposed to upgrade a significant number of footpaths to bridleways to allow more opportunities for cyclists and horse-riders and encourage informal recreation and sustainable travel options.

5.3 An objective assessment demonstrates that the SANGS which will be provided will be of an outstandingly high quality.

Table 2: Environmental Action Plan in relation to NE SANGS Guidelines

Ref	Criteria	Current	Future	Comment
Essential features				
1	For all sites larger than 4ha, there must be adequate parking for visitors, unless the site is intended for local use, i.e. within easy walking distance (400m) of the developments linked to it.	n/a	n/a	No specific car parking space will be provided because the SANGS is intended for use by on-site residents. Residential dwellings and associated parking will be provided within 400m of the SANGS.
2	It should be possible to complete a circular walk of 2.3-2.5km around the SANGS.	In part	✓	Existing public rights of way presently allow walks around the wider application site, but newly created routes will provide a continuous circular walk around the entire SANGS.
3	Car parks must be easily and safely accessible by car and should be clearly signposted.	n/a	✓	Access from residential car parking to the SANGS will be provided by new and existing footpaths which will be clearly signposted. Residential car parking within 400m of the site will not be available for use by visitors.
4	The accessibility of the site must include access points appropriate for the visitor use the SANGS is intended to cater for.	In part	✓	Access to the SANGS is mostly aimed at those on foot or bicycle and there will be minimal restrictions in the form of gates or barriers, although temporary fencing may be necessary to allow new planting to become established and to protect 'quiet' or wildlife-sensitive zones (see 11 below). Path surfaces will be semi-naturalistic and durable.
5	The SANGS must have a safe route of access on foot from the nearest car park and/or footpath/s	In part	✓	There will be safe and signposted paths and cycle tracks leading into the SANGS from on-site dwellings and associated residential car parking.
6	All SANGS with car parks must have a circular walk which starts and finishes at the car park.	n/a	n/a	Although there will be no dedicated visitor parking for the SANG (see 1) the circular walk will be easily accessible and signposted from residential properties on site,
7	SANGS must be designed so that they are perceived to be safe by users; they must not have tree and scrub cover along parts of the walking routes.	In part	✓	Existing paths on site that will be retained are generally wide and open and go around instead of through woodland, such as Spratt's Plantation. Any denser sections, for instance the conifer strip beside the existing public bridleway adjacent to Ipswich Road, will be softened by new broadleaved planting to allow greater space and an added sense of security. In the south-east corner of the application site additional 'hedgerow' planting is proposed which will partly screen the new dwellings, but at the same time allow for a light and open landscape of clearings and glades.
8	Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming urban in feel.	✓	✓	The existing network of paths and public rights of way are unsurfaced; it is not proposed to introduce any hard or artificial surfaces, such as tarmac, but instead either retain entirely natural surfaces (such as mown grass) or introduce semi-surfaced and naturalistic finishes such as compacted aggregate or hoggin on the more intensively used routes. The paths will be maintained to a sufficient width to allow easy use.
9	SANGS must be perceived as semi-natural spaces with little intrusion of artificial structures, except in the immediate vicinity of car parks. Visually-sensitive way-markers and some benches are acceptable.	In part	✓	The proposed SANGS will have a semi-natural feel throughout. The core area measures over 18.1ha and is centred on a well-established lake, open meadows and amenity grassland. This leads into what will be a large area of recreated lowland heath. New and existing woodland planting and landscaping around the SANGS will further screen the new dwellings and help reinforce the perception of a semi-naturalistic landscape.
10	All SANGS larger than 12 ha must aim to provide a variety of habitats for users to experience	x	✓	As described above, there will be a wide variety of habitats, including an extensive area of water and wetland edges, incorporating timber boardwalks for access to the water. Reintroducing increasingly scarce lowland heath will benefit biodiversity and play a key educational role, while enhancing the condition of existing woodland and introducing new native tress will further improve this different habitat. The variety and quality of the overall SANGS will be further enhanced by the key SANGS link which connects the lake and heathland area in

Ref	Criteria	Current	Future	Comment
				the centre to the western part of the site, and in so doing crosses the heritage park with its historical interest and setting that will provide another significant focal point (see 19 below).
11	Access within the SANGS must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.	x	✓	Access is currently restricted to a few linear rights of way. The proposed SANGS will allow much wider and largely unhindered access. In particular, there will be an 'active zone' beside the lake where the off-lead exercise of dogs and other informal recreation will be positively encouraged. However, there is likely to be a small 'quiet zone' of low disturbance where, for instance, fences will protect sensitive wildlife and in which dogs will be required to be kept on a lead. The proposed upgrade of footpaths to bridleways at locations across the site will provide more opportunities for cyclists and horse riders.
12	SANGS must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).	x	✓	The active quarry presently at the heart of the site will cease production and there will be no unpleasant intrusions in the future.
Desirable features				
13	SANGS should be clearly signposted or advertised in some way.	In part	✓	Although there are some existing public rights of way signposts, the new SANGS will be indicated by signposts/markers and interpretation boards. In particular, the 2.3-2.5km circular walk will be clearly indicated from residential dwellings.
14	SANGS should have leaflets and/or websites advertising their location to potential users. It would be desirable for leaflets to be distributed to new homes in the area and be made available at entrance points and car parks.	x	x	The new signposts and interpretation boards referred to above (13) will adequately promote the new SANGS.
15	It would be desirable for an owner to be able to take dogs from the car park to the SANGS safely off the lead.	n/a	n/a	The SANGS is intended for use by on-site residents only, so no specific car parking space will be provided. Residential dwellings and associated parking will be provided within 400m of the SANGS, so new dog owners will be able to access the SANGS directly.
16	Where possible it is desirable to choose sites with a gently undulating topography.	In part	✓	The site of the proposed SANGS is gently undulating already and, once the present mineral extractions cease, careful landscaping will further enhance the topography of the wider site.
17	It is desirable for access points to have signage outlining the layout of the SANGS and the routes available to visitors.	x	✓	As above, the new SANGS will be indicated by signposts/markers and interpretation boards and the 2.3-2.5km circular walk clearly indicated.
18	It is desirable that SANGS provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water on part, but not the majority of sites is desirable.	x	✓	The large, well-established and attractively framed lake already offers the aesthetic attraction of open water. It will be surrounded by a significant area of open space, comprising meadow, shorter amenity grassland and recreated lowland heath. There will be a significant area of mature woodland (Spratt's Plantation) and an attractive mix of scrub and intermittent woodland dispersed not just around the edge of the main SANGS area but also along the SANGS links across the entire site.
19	Where possible it is desirable to have a focal point such as a view point, monument etc within the SANGS.	x	✓	At the heart of the core SANGS area is the lake, which will be encircled by paths and provide a natural focus for both recreation and wildlife interest. In the west of the site the Bowl Barrow (a scheduled archaeological monument) will become another focal point within the SANGS area. Neither location has been accessible to the public until now.

Waldringfield SSSI Outline Conservation Objectives and Management Prescriptions

5.4 The following is summarised from information with the Statement on Geodiversity (Harrison Group Environmental, 2017). Potential future threats are outlined below with corresponding mitigation measures:

- Development at the base of quarry is not compatible with the conservation of the exposure, given that public access to the exposure is maintained. The development will maintain a buffer from the base of the slope, based on slope stability, material movement.
- Development above the quarry face will provide a safe stand-off distance to ensure structural stability is maintained without the need for slope stabilising works (retaining walls, geotextile membranes etc.), which may otherwise obscure physical access and the extent of the exposure.
- Due to natural weathering processes, the slope will slowly regress. The slope may also suffer future instability, which will require reprofiling, and hence will regress slowly over time.
- A stand-off distance of 10m at the exposure toe and crest will be created. The stand-off distance will be fenced during construction.
- Vegetation coverage was variable, including areas of dense brambles and sparse mature trees. Vegetation encroachment will increase without appropriate management. Removal of existing trees will not be undertaken without prior assessment, as this aids slope stability. A programme of vegetation management/clearance will be carried out to ensure clean exposure of the deposits is maintained. Planting trees within the stand-off area at the slope toe will be avoided to prevent obscuring the view.
- Paths and trails to the SSSI will be created to allow access, with fencing at least 5m from the toe of slope to prevent unrestricted access onto steeper slopes for health and safety reasons and to prevent footfall from disturbing some of the cleaner and more vertical exposures.
- A permanent information board will be produced and installed during Phase 1.
- Natural weathering will obscure some of the more important sections over time. The site management plan will identify key sections of the exposure that can be hand- or machine-excavated to expose the key sequence of materials present but are located in safe and accessible areas

6.0 Phasing of RAMS Payments

6.1 SCDC is currently developing a Recreational Avoidance and Mitigation Strategy (RAMS), in partnership with Ipswich Borough Council and Babergh District Council, as a measure to provide a means of mitigating the effects of increased recreational disturbance from agreed increases in housing allocations on European designated sites. This proposed development has agreed to make a series of payments into the RAMS as part of the mitigation.

6.2 Phasing of payments into the RAMS will be detailed within the S106, subject to agreement, as follows:

- Prior to occupation of first dwelling 10% of total £300k.
- Prior to occupation of first house in Phase 2 – 20%.
- Prior to occupation of first house in Phase 3 – 20%.
- Prior to final occupation – 50%.

6.3 It is understood that the above RAMS payment will contribute to matters, to include enhanced wardening and monitoring of visitor impacts upon designated European nature conservation sites.

7.0 Part 2: Environmental Action Plan

7.1 This includes a list of all environmental issues to be conditioned. The triggers within the planning conditions will emerge from further discussions between SCDC and the applicant however the broad principles are set out below.

7.2 The phases refer to drawing 31677 17: Green Infrastructure Phasing Plan.

All Phases

- Detailed landscape plans and planting schemes including structural landscape planting to boundaries and planting to areas of public open space, incorporating the various sub-phases of activity. This also includes the creation and enhancement of habitats and planting associated with green infrastructure i.e. green corridors and routes through the SANGS areas. It should be noted that the EAP supersedes the information shown on the illustrative Strategic Landscape Scheme (drawing 10317/P14a).
- Lighting plan and lighting strategy to cover ecologically sensitive areas and/or areas where enhancements to biodiversity are important e.g. valley, school etc.
- Produce targets and associated drawings for nest boxes for swifts, starlings, house sparrows and roosting boxes for bats.

Phase 1

- Planting scheme and method statement for restoration of heathland and lake area within main green infrastructure area including rabbit management and human disturbance monitoring and management.

Phase 2

- Management of pill boxes for bats including access and provision of bat roosting features and, where appropriate, within the built development based on best practice e.g. Murphy et al., (2013).

Phase 3

- Management of Waldringfield geological SSSI based on the principles set out in Section 5 above.

8.0 References

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Table 3: Green Infrastructure Summary Management, Monitoring and Timetable

Habitat	Habitat/Species Objectives	Management Prescriptions	Outline Management Programme	Outline Monitoring Programme
Spratt's Plantation	Maintain woodland extent Enhance cover of oak and other native species. Improve structural diversity.	Remove sycamore through annual removal programme Maintain rides and corridors Review creation of a coppice and standards rotation Provide signage, dog bins and maintain PRoW	2018 Prepare and agree management plan with annual work programme and projects 2019-2032 Undertake management programme	Construction monitoring – regular checks on barrier fence and habitat integrity Post construction monitoring – species composition and habitat quality indicators (to be agreed)
Heathland	Establish dry heathland with ling *Calluna vulgaris* and especially bell heather *Erica cilearis* dominated heathland and acid grassland mosaic. Establish scrub perimeter	Analyse surface and available soils and agree detailed prescriptions to restore heathland via deep ploughing and seeding using cuttings from local heaths and/or grassland management and possibly heather planting from local heaths. Maintain annual spread of heather cuttings if required. Follow expert advice, for example, RSPB's Practical Management Guide for lowland heathland (Day and Symes, 2003). Introduction of rare plant species from development areas using cut turves and/or seed harvesting Maintain high rabbit densities but restrict impacts elsewhere by provision of rabbit fencing. Active management by cutting, topping and/or spraying maybe required to control plant species, including thistle, ragwort, birch and bracken. Grazing may be incorporated into the management programme, to control problem species and enhance the vegetation structure. Maintain scrub perimeter. Consider re-introduction scheme for silver-studded	Commence restoration in 2018.	Monitoring through construction and post-construction on habitat extent and key flora and fauna indicators (including *Calluna vulgaris and Erica cilearis*). Human disturbance monitoring of sensitive ecological features.

Habitat	Habitat/Species Objectives	Management Prescriptions	Outline Management Programme	Outline Monitoring Programme
		blue butterfly		
Lake	Maintain lake and enhance surrounds with scrub. This will include creating scallops for shrub creation for nightingale and creation of a sand martin bank (noting that they may also use the SSSI). Scrub creation and management methods will take account of BTO Conservation Advice No 1. (2015) *Managing Scrub for Nightingales*. Ensure no pollution from construction. Manage human use.		Manage lake from 2018. One small section of scrub will not be managed until 2020/2021 after vacation of quarry works site.	Water quality and water level monitoring regularly through construction. Post-construction: monitoring of water levels and key indicators. Monitoring of nightingales (across site).
Heritage Park	Managed as public space but with hedgerows and some scrub planting to enhance bat roosts in Pill Boxes. Pill boxes managed as bat roosts.	Establishment and management	.	Bat monitoring programme through construction and post construction
SANGS Link 1	Managed for human use. Planting of a native species-rich hedgerow to enhance connectivity for bats and other wildlife.	Annual mowing and scrub/tree management.		
Valley Corridor	Maintain and manage as neutral/acid grassland mosaic. Maintain rare plant species. Introduction of rare plant species from development areas by provision of turves and/or seed harvesting. Establish and maintain bare sand areas for invertebrates.	Create areas of steeper slopes as part of the landscaping. Over these patches the sand is unstable and continuously falls, exposing bare sand. A suite of rare invertebrates specialises in colonising bare sand, which is an increasingly rare habitat.	Restore valley grasslands from 2018.	Monitoring of grassland indicator. plant species through construction. Post construction monitoring of grassland indicators.

Habitat	Habitat/Species Objectives	Management Prescriptions	Outline Management Programme	Outline Monitoring Programme
South east corner of the site	Managed as species rich meadow.	Planting and late season mowing.		
SANGS Link 2	Southern boundary woodlands managed as bat commuting corridor.	Maintain. Lighting (Low lighting) management.		Bat monitoring programme through construction and post construction.
SANGS Link 3	Eastern boundary woodlands and scrub managed for human use and wildlife corridor.	Annual mowing (late rotation to promote wildflowers) and scrub/tree management.		Bat monitoring programme through construction and post construction.
SANGS Link 4	Western boundary woodlands and scrub managed as visual buffer and wildlife corridor	Annual scrub/tree management		Bat monitoring programme through construction and post construction.
Allotments/Community Orchards	Managed for birds and invertebrates.	Orchard planting and aftercare including winter pruning and seasonal mowing. Allotment – management of plot boundaries and boundary fencing/hedging.		
Formal recreation open space	Amenity grasslands managed for sports and other outdoor recreation.	Regular mowing		
Road crossings and built environment	Bat boxes Bird boxes Low light zones at key crossing points for bats. Speed limits at key crossing points for wildlife	Programme of installation during construction. Lighting design.		