



Hallam Land Management

Bognor Regis Golf Club, Bognor Regis

APPENDIX 8.2 - PHASE ONE REPORT - SITE A

December 2021

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CONTENTS

1.0	NON-TECHNICAL SUMMARY	2
2.0	INTRODUCTION	3
3.0	LEGISLATION AND POLICY	4
4.0	METHODOLOGY.....	5
5.0	RESULTS.....	8
6.0	DISCUSSION AND RECOMMENDATIONS	15

TABLES

Table 1: Statutory Sites of International Conservation Value within 15km

Table 2: Summary of Hedgerow Survey Results

FIGURES

Figure 1: Designated Site Plan

Figure 2: Phase 1 Habitat Plan

APPENDICES

Appendix A: Botanical Species List

Appendix B: Biodiversity Net Gain Calculation

1.0 NON-TECHNICAL SUMMARY

Report Scope and Methodology
- FPCR were commissioned by the Hallam Land Management Limited to undertake an Ecological Appraisal at Bognor Regis Golf Club, Bognor Regis, to provide an ecological baseline for the Site and determine its ecological importance. - The Site is proposed for a development comprising up to 480 new homes with associated infrastructure. - An extended Phase 1 Habitat survey, desktop study and range of protected species surveys have been completed or are underway by FPCR to inform this assessment.
Key Findings
- Eight Statutory Designated Sites were located within 15km of the Site, the closest is the Solent and Dorset Coast SPA (marine components) which lies 1.5km south. The closest terrestrial designated site is the closest of which was Pagham Harbour SPA/SAC/SSSI, situated c. 7.2 km to the south-west of the site. This is outside of the SPA/SAC/SSSI zone of influence, therefore no significant impacts are predicted. - One non-statutory site, The Brooks LNR, is located 1km to the west of the site. The provision of onsite GI space will limit any increase in recreational pressures. - The Site was dominated by intensively managed amenity grassland, with a large resource of mature trees planted in groups/lines. A network of wet and dry ditches, along with three ponds and eight buildings were located on-site. Habitats on-site were considered to be of no more than local importance. - Six hedgerows (H1, H2, H3, H4, H5, and H7) were considered to be important under the Hedgerow Regulations and the majority of hedgerows comprised at least 80% native woody species and were therefore considered habitats of principal importance (NERC S.41). - The proposals will lead to a net gain of 10.29% for habitats, 17.43% for hedgerows and 46.95% for rivers, meeting the Environment Act's 10%.
Recommended Mitigation and Enhancements
- A large expense of GI will be created in the western and northern extent, buffering the Lidsey Rife. Habitats proposed include woodland, species-rich grassland which will include tussock-forming species, hedgerows, SuDS and a new ditch network which will increase biodiversity within the Site. - All hedgerows, woodland and mature trees will be retained wherever possible.

2.0 INTRODUCTION

- 2.1 This Phase 1 Report has been prepared by FPCR Environment and Design Ltd, on behalf of Hallam Land Management (HLM) in support of an outline planning application for the residential redevelopment of Bognor Regis Golf Course to Arun District Council.
- 2.2 Bognor Regis Golf Club (the Golf Club) and HLM are working in partnership to secure the long-term future of the Golf Club through relocation to a benchmark new venue that will be facilitated by the redevelopment of the existing course for new homes and parkland.
- 2.3 The Golf Club, is located in Bognor Regis, West Sussex (central OS Grid Reference: SU 95019 01235) and is herein referred to as 'the Site'. The survey comprised an Extended Phase 1 Habitat Survey including initial observations of any suitable habitats for, or evidence of, protected/notable species. Following this, a range of surveys were recommended for protected species that formed the baseline for the Ecology Chapter, this included the following reports:
- Bat Report (FPCR 2021)
 - Bird Report (FPCR 2021)
 - Great Crested Newt Report (2021)
 - Hazel Dormouse Report (FPCR 2021)
 - Reptile Report (FPCR 2021)
 - Riparian Mammal Report (FPCR 2021)

Site Location and Context

- 2.4 The Site covers an area of approximately 40ha and currently comprises the existing Bognor Regis Golf Course with associated club house and car parking. Vehicular and pedestrian access is provided from Golf Links Road. The golf course comprises fairways, fairway trees with drainage ditches. A practice green is also located close to the club house.
- 2.5 The Site is located to the north of Felpham and Bognor Regis and is adjacent to the north-western edge of the built-up area of Felpham. It is bounded to the west by Lidsey Rife, beyond which is the LEC Airfield, a railway line and areas of commercial development. To the north is the A259. To the east is the existing residential environs of Felpham and Downview Primary School. To the south are open fields extending to the B2259 and further afield Felpham.

Site Proposals

- 2.6 Outline planning application with all matters reserved, except means of access, for the erection of up to 480 new homes (C3), the formation of a new means of access onto Golf Links Road, together with the creation of new surface water drainage, new landscaping and habitat creation, ground works and other infrastructure. The retention and re-purposing of the retained club house.

3.0 LEGISLATION AND POLICY

3.1 The national policy and legislation most relevant here are:

- The Conservation of Habitats and Species Regulations (“The Habitats Regulations”) 2019 (Amendment) (EU Exit) in relation to the European Protected Species (EPS) great crested newt, (GCN), bats (all species) and dormouse; and European protected sites i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPAs) and Internationally protected “Ramsar Sites” (collectively known as “Natura 2000 sites”). Annex II bat species of particular relevance in relation to SACs designated for bats.
- The Wildlife and Countryside Act 1981 (WCA) (as amended) in relation to all wild birds (including Schedule 1 species), other animals (notably Schedule 5 species), flora (those listed in Schedules 8 and 9) and Sites of Special Scientific Interest (SSSI);
- Protection of Badgers Act 1992;
- Environment Act 2021;
- Natural Environmental and Rural Communities (NERC) Act 2006 in relation to various priority species and habitats;
- Hedgerow Regulations 1997 made under Section 97 of the Environment Act 1995;
- National Planning Policy Framework (NPPF) (2021);
- Local Planning Policy contained within Arun District Local Plan (2018). Policies relevant to this assessment include Policy ENV SP1: Nature Environment, Policy ENV DM1: Designated Site of . Policy ENV DM2: Pagham Harbour, Policy ENV DM5: Development and Biodiversity.
- Local Nature Reserves (LNR) as designated most recently by the NERC Act 2006;
- Non-statutory protected local sites including County Wildlife Sites (CWS), Sites of Importance for Nature Conservation (SINC), Local Wildlife Sites (LWS) and Ancient Woodland Inventory (AWI) sites;
- Local Biodiversity Action Plans (LBAP); and
- Birds of Conservation Concern (BoCC).

4.0 METHODOLOGY

Desk Study

- 4.1 In order to compile existing baseline information, relevant ecological information was requested from the following consultees and sources:
- Sussex Biological Records Centre (SxBRC)
 - Multi Agency Geographic Information for the Countryside (MAGIC) website¹;
 - Colour 1:25,000 OS base maps²;
 - Aerial photographs from Google Earth³.
- 4.2 The search area for biodiversity information was related to the significance of sites and species and potential zones of influence, as follows:
- 15km around the application area for sites of International Importance (e.g. Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites).
 - 2km around the application area for sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSIs).
 - 1km around the application site for sites of County Importance (e.g. Biological Heritage Sites (BHS)) and species records (e.g. protected, Local Biodiversity Action Plan (LBAP) or notable species).

Habitats/Flora

- 4.3 Survey methods were based on the standard Extended Phase 1 Habitat Survey Methodology as recommended by Natural England which follows methods detailed in the Handbook for Phase 1 Survey⁴. This comprised a systematic walkover of the site mapping and broadly describing the principal habitat types and identifying the dominant plant species/communities present within each habitat type.
- 4.4 Where feasible, target notes and species lists were compiled for individual areas and assessments of abundance were made using the DAFOR scale. Vascular plant nomenclature follows Stace (2010)⁵. Whilst the species lists collected should not be regarded as exhaustive, sufficient information was gained during the survey to enable classification and assessment of broad habitat types and identify features likely to be of interest
- 4.5 In addition, hedgerows were surveyed using the Hedgerow Evaluation and Grading System (HEGS)⁶. This method of assessment includes noting down canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps,

¹ [Online]. <http://magic.defra.gov.uk/>

² [Online]. www.ordnancesurvey.co.uk

³ [Online]. www.maps.google.co.uk

⁴ JNCC. (1990). Handbook for Phase 1 habitat survey – a technique for environmental audit. Peterborough: JNCC (as amended 2003 & 2007)

⁵ Stace, C.A. (2010). New Flora of the British Isles. (3rd Ed.). Cambridge: Cambridge University Press

⁶ Clements, D. & Toft, R. (1992). Hedgerow Evaluation and Grading System (HEGS) – a methodology for the ecological survey, evaluation and grading of hedgerows. Countryside Planning and Management

along with associated features such as; the number and species of mature trees, banks, ditches and grass verges.

- 4.6 Each hedgerow was given a grade using HEGS with the suffixes '+' and '-', representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:

Grade 1 – High to very high value;

Grade 2 – Moderately high to high value;

Grade 3 – Moderate value;

Grade 4 – Low value.

Hedgerows graded 1 or 2 are considered to be a priority for nature conservation.

- 4.7 Also, where appropriate, hedgerows were broadly assessed against the Wildlife and Landscape criteria contained within The Hedgerow Regulations 1997 to determine whether they qualified as 'Important Hedgerows'. This was achieved using a methodology in accordance with both the Regulations and DEFRA guidance.
- 4.8 It should be noted that hedgerows may also qualify as Important under the Archaeology and History criteria of the Hedgerow Regulations 1997 Act, which is beyond the scope of this assessment.

Biodiversity Net Gain Calculation

- 4.9 DEFRA has developed a metric, version 3.0, which is based on evaluating each individual habitat's value as they exist and how this value will be affected by a proposed development, these are assessed using Defra technical guidance⁷. The guidance provides a list of criteria for a range of broad habitat types, which are used to determine whether habitat fall into a 'poor', 'moderate' or 'good' condition score. The comparison between the existing and new habitats result in a positive or negative BNG score, Environmental Act 2021 states that "*the relevant percentage is 10%*" as a biodiversity net gain target.

Survey Personnel and Conditions

- 4.10 The habitat survey was originally undertaken on 8th and 9th June 2016 by Holly Stanworth, an Associate Ecologist with over ten years of experience in Ecological Consultancy who is experienced in botanical surveys having achieved a level 4 on the Botanical Society of Britain and Ireland's (BSBI) Field Identification Skills Competency (FISC), equivalent to tutor level identification skills. The update Phase 1 Habitat survey was undertaken on 23rd of August by Kat Bawler and Lindsay Clark, a Principal Ecologist with over 10 years of experience and a Senior Ecologist with over seven years of experience in Ecological Consultancy, who are both experienced in botanical surveys having achieved a level 3 and a level 4 on the Botanical Society of Britain and Ireland's (BSBI) Field Identification Skills Competency (FISC), respectively.

⁷ Natural England (2021) *Biodiversity Metric 3.0 Auditing and accounting for Biodiversity User Guide*. Worcester, Natural England.

Survey Limitations

- 4.11 No limitations specific to this report influenced this assessment.

5.0 RESULTS

Desk Study

Statutory Sites

Internationally Designated Sites of Nature Conservation Importance

- 5.1 Eight internationally statutory designated sites are present with 15km of the site, some have multiple overlapping designations including those of a national statutory basis e.g. SSSI. Of these the closest is the Solent and Dorset Coast SPA (marine components) which lies 1.5km south. The closest terrestrial designated site is Pagham Harbour SPA/Ramsar/SSSI which is approximately 7.2km south-west, meaning the site is outside the 5km zone of influence as identified by the Arun Valley Council⁸.
- 5.2 All other designated sites are at least 11km from the site, further details including reasons for designation are provided in *Table 1* below.

Table 1: Statutory Sites of International Conservation Value within 15km

Site Name	Designation	Approximate Distance & Direction from Site	Summary Description
Statutory			
Solent and Dorset Coast	SPA (Marine Components)	1.5km S	The site is located along the coasts of Dorset, Hampshire, Isle of Wight and West Sussex and adjacent areas offshore. It overlaps, abuts and is close to many designated areas. The site regularly supports more than 1% of the Great Britain breeding populations of three species listed in Annex I of the Birds Directive including sandwich tern <i>Sterna sandvicensis</i> , common tern <i>Sterna hirundo</i> and little tern <i>Sternula albifrons</i> .
Pagham Harbour	SPA/Ramsar/SSSI	7.2km SW	The site comprises an area of estuarine basin with extensive saltmarsh and intertidal mud-flats, surrounded by lagoons, reed swamp and wet grassland. The mud flats are rich in invertebrates and are important habitats for wintering wildfowl and waders including Ruff <i>Philomachus pugnax</i> and Pintail <i>Anas acuta</i> as well as breeding birds including Little Tern.
Chichester and Langstone Harbours	SPA/Ramsar/SSSI	11km W	Large estuarine basin with extensive mud and sandflats. Supports internationally important numbers of certain wildfowl / waders including ringed plover <i>Charadrius hiaticula</i> , redshank <i>Tringa totanus</i> , dunlin <i>Calidris alpina</i> , curlew <i>Numenius arquata</i> , shelduck <i>Tadorna tadorna</i> , teal <i>Anas crecca</i> and greenshank <i>Tringa nebularia</i> . The wide range of habitats present supports important plant communities.
Solent Maritime	SAC	11km W	Major estuarine system with a complex of marine and estuarine habitats including Annex 1 habitats (Estuaries, Spartine swards and Atlantic salt meadows) which are the primary reasons for designation
Duncton to Bignor Escarpment	SAC/SSSI	11.3km N	An example of mature beech woodland on a steep scarp face with all stages of succession present. A rare fern, snail and a notable moth community have all been recorded.

⁸ Adoption Arun Local Plan 2011-2031 (July 2018) Arun District Council. Available online <https://www.arun.gov.uk/download.cfm?doc=docm93ijm4n12844.pdf&ver=12984>

Site Name	Designation	Approximate Distance & Direction from Site	Summary Description
Arun Valley	SAC/SPA/Ramsar	13.7km NE	An extensive area of grazing marsh dissected by drainage ditches which support a rich flora and a diverse community of breeding birds. Several uncommon invertebrates are also present including the Annex II species, Ramshorn snail, which is a primary reason for the designation of the site.
Singleton & Cocking Tunnels	SAC/SSSI	14.2 N	The tunnels constitute the most important site for hibernating bats in south-east England with eight species recorded here including the only known location in Britain for the mouse-eared bat <i>Myotis myotis</i> .
Kingley Vale	SAC/SSSI	14.8 NW	Is of interest for its yew woodlands which is considered the best example of which in Britain. Chalk grassland, chalk heath, juniper scrub and yew scrub are also present and the site supports a rich community of breeding birds and diverse invertebrate assemblage.

Nationally Designated Sites of Nature Conservation Importance

- 5.3 One SSSI was located within 2km of the Site, which comprised Felpham SSSI, located 1.4km south and is designated for geological interest, thus is not considered any further in this document.
- 5.4 No other nationally designated statutory sites of nature conservation importance were located within the 2km search area.

Non-Statutory Sites

- 5.5 One non-statutory site, The Brooks (also known as Bersted Brooks) LNR, is located within the search area, 1km to the west of the site. It is an area of floodplain meadow with recently planted wet woodlands as well as a network of ditches and ponds with reedbeds.
- 5.6 No other non-statutory sites of nature conservation importance were located within the 1km search area.

Habitats/Flora

- 5.7 The locations of the habitats described below are illustrated in *Figure 2: Phase 1 Habitat Plan*. A botanical species list is provided in *Appendix A*.

Amenity Grassland

- 5.8 In line with the site's use as a golf course the predominant habitat was intensively managed amenity grassland, regularly mown to maintain fairways with a short sward height suitable for golf. The species assemblage was typical of highly managed grassland with grass species present including perennial rye-grass *Lolium perenne*, annual meadow-grass *Poa annua*, crested dog's-tail *Cynosurus cristatus*, Yorkshire-fog *Holcus lanatus* and rough meadow-grass *Poa trivialis*. Herb species present included dandelion *Taraxacum officinale*, creeping buttercup *Ranunculus repens*, yarrow *Achillea millefolium*, white clover *Trifolium repens*, daisy *Bellis perennis* and ribwort plantain *Plantago lanceolata*.

Semi Improved Grassland

- 5.9 Small areas of semi-improved grassland were present in peripheral areas away from the fairways where the management regime has been reduced allowing a taller sward height and more diverse species assemblage to develop. Species present included cock's-foot *Dactylis glomerata*, meadow foxtail *Alopecurus pratensis*, common knapweed *Centaurea nigra*, hogweed *Heracleum sphondylium* and greater plantain *Plantago major*.

Broadleaved Plantation and Mixed Plantation Woodland

- 5.10 There is a large resource of mature trees on site planted in groups/lines separating the fairways as well as around the periphery of the site. Species recorded include pedunculate oak *Quercus robur*, horse chestnut *Aesculus hippocastanum*, ash *Fraxinus excelsior*, Scots pine *Pinus sylvestris*, and willow species including crack, goat and grey *Salix fragilis*, *caprea* and *cinerea*.
- 5.11 The understorey and ground flora beneath the tree groups was generally sparse and species poor due to management practices including mowing, with some areas of rough grassland and ruderal habitats present. Species recorded included hybrid bluebell *Hyacinthoides x massartiana*, cleavers *Galium aparine*, red campion *Silene dioica*, false oat-grass *Arrhenatherum elatius*, and wood dock *Rumex sanguineus*.

Hedgerows

- 5.12 There are 13 hedgerows on site 11 of which contain over 80% native woody species and therefore qualify as Habitats of Principal Importance (HPI) under Section 41 or the NERC Act.
- 5.13 Under the HEGs criteria four hedgerows (H2, H3, H7, H8 and H12) were assessed as having high (Grade 1) value, two (H1 and H4) as having moderately high to high (Grade 2) value, six (H5, H6, H8, H9, H10 and H13) were moderate (Grade 3) and one (H12) low (Grade 4) value. Six hedgerows (H1, H2, H3, H4, H5, and H7) were classified as important under the Wildlife and Landscape criteria of the Hedgerow Regulations 1997 due to the number of woody species recorded and associated features present.
- 5.14 Details of the hedgerow' composition, structure and associated features are summarised in *Table 2* below including their assessment against the HEGS.

Table 2: Summary of Hedgerow Survey Results

Ref	Canopy Sp.	Length (m)	Notes	HEGS Value and Score	Important Under REGS
H1	Cm, Fe, Rf, Ps, Pdn, Sn, Cs	305	7 tree standards, no gaps, 2 connections, adjacent ditch D1	2 Moderately high to high	Important 6sp/30m 3 Associated Features
H2	Cm, Rf, Sn, Qr, Sxf, Up, Cs	123	16 tree standards, no gaps, 3 connections, adjacent ditch D1	-1 High	Important 6sp/30m 3 Associated Features
H3	Cm, Rf, Si, Ag, Sa, Ac, Bp, Ee, Ps, Cs, Sn, Qr	205	Not managed as a hedgerow, developing into a treeline particularly at northern end. 13 tree standards, <10% gaps, 4+ connections, adjacent ditch D4.	-1 High	Important 10sp/30m

Ref	Canopy Sp.	Length (m)	Notes	HEGS Value and Score	Important Under REGS
H4	Sxf, Cm, Sn, Sxc, Rf	108	Unmanaged and turning into treeline either side of track.. 14 tree standards, no gaps, 2 connections, dry ditch and adjacent footpath	2+ Moderately high to high	Important 4sp/30m 3 Associated Features Footpath Present
H5	Fe, Sxc, Cm, Pdn, Rf, Rc	345	Unmanaged and turning into treeline either side of track.. 4 tree standards, 10 – 40% gaps, 3 connections, dry ditch, adjacent footpath and parallel with H7.	3 Moderate	Important 5sp/30m 3 Associated Features Footpath Present
H6	Sxsp, Cm, Fe, Ap	183	Gappy scrubline along PRoW. 4 tree standards, 10 – 30% gaps, 3 connections, partially wet ditch, adjacent footpath and parallel with H7.	3 Moderate	Not Important 4sp/30m 1 Associated Feature
H7	Rf, Ah, Sn, Qr, Psp., Cm, Sxc, Poa, Pdn, Tb, Ap, Ac, Ps, Sxf, Fe, Pl,	460	Overgrown hedgerow along golf course boundary, 12 tree standards, no gaps, 3 connections.	-1 High	Important 12sp/30m
H8	Fs, Cxl	20	Hedge around building. 1 tree standard, >30% gaps, 1 connection	3 Moderate	Not Important 2sp/30m
H9	Cm, Rf, Rc, Sn	155	Unmanaged. No tree standards, <10% gaps, 2 connections.	3 Moderate	Not Important 4sp/30m
H10	Sxc, Cm, Sxsp, Rf, Sn	172	6 tree standards. <10% gaps, 2 connections	3 Moderate	Not Important 4sp/30m
H11	Pdn, Ps, Sn, Ap, Ac, Rf, Sxsp, Cm, Ca, Fe, Apl, Cxl, Ia	377	Unmanaged boundary to residential buildings, turning to treeline. 13 tree standards, no gaps, 3 connections.	-1 High	Not Assessed Residential Boundary
H12	Lo Sn	20	No tree standards, no gaps, no connections.	4 Low	Not Assessed Clubhouse Boundary
H13	Ac Rf Cm Sn Rj	42	Short section of hedgerow bordering car park. No tree standards, 0 – 10% gaps, no connections	- 3 Moderate	Not Assessed Residential Boundary

Hedgerow Species: **Ac** *Acer campestre* Field maple, **Ag** *Alnus glutinosa* Alder, **Ah** *Aesculus hippocastanum* Horse Chestnut, **Ap** *Acer pseudoplatanus* Sycamore, **Apl** *Acer platanoides* Norway Maple, **Bp** *Betula pendula* Silver Birch, **Ca** *Corylus avellana* Hazel, **Cm** *Crataegus monogyna* Hawthorn, **Cs** *Cornus sanguinea* Dogwood, **Cxl** *Cupressus x leylandii* Leyland cypress, **Ee** *Euonymus europaeus*, Spindle, **Fe** *Fraxinus excelsior* Ash, **Fs** *Fagus sylvatica* Beech, **Ia** *Ilex aquifolium* Holly, **Lo** *Ligustrum ovalifolium* Garden privet, **Psp.** *Pinus sp* Pine, **Pdn** *Prunus sp* Cherry, **Pl** *Prunus laurocerasus* Cherry laurel, **Poa** *Populus alba* White poplar, **Ps** *Prunus spinosa* Blackthorn, **Qr** *Quercus robur*, *Pedunculate Oak*, **Rc** *Rosa canina* Dog-rose, **Rf** *Rubus fruticosus* agg. Bramble, **Rj** *Reynoutria japonica* Japanese Knotweed, **Sa** *Sorbus aucuparia*, Rowan, **Si** *Sorbus intermedia* Swedish whitebeam, **Sn** *Sambucus nigra* Elder, **Sxc**, *Salix caprea* Goat willow, **Sxf** *Salix fragilis* Crack willow, **Sxsp** *Salix sp.* Willow species. **Tb** *Taxus baccata* Yew, **Up** *Ulmus procera* Elm.

Waterbodies and Riparian Habitats

5.15 There are three ponds and a network of wet and dry ditches on site as well as the Lidsey Rife along the western boundary. These are discussed in more detail with regards to their suitability to support water vole within the accompanying water vole report (FPCR 2021). A brief description of the key ditches (as referenced on the Phase 1 Habitat Plan in *Figure 2*) is provided below:

- Ditch 1: Along northern boundary, wet with common reeds *Phragmites australis*, steep banks up to 3m tall, c. 2-5m wide, overgrown/shaded by bramble *Rubus fruticosus* agg. in places, associated with Pond 4.

- Ditch 2: Shallow, wet ditch in south of site, with shallowly sloping banks associated with Pond 3. Banks covered densely in vegetation.
 - Ditch 3: Mostly dry ditch on western side of the site, approx. 2- 5m wide with steep banks. Heavily vegetated with bank side trees, scrub and emergent vegetation. Parrot's feather *Myriophyllum aquaticum* present.
 - Ditch 3a: Mostly dry ditch connected to D3, well managed artificial ditch with vertical banks and limited vegetation. Parrot's feather present.
 - Ditch 4: Short section of onsite ditch which connects with the Lidsey Ride via a sluice. Dry at the time of survey with steep banks, and heavily vegetated with scrub species.
 - Ditch 5: Short section of ditch partially within tree groups/fairways, with intermittent gaps where golf green is present. Steep, but small banks with channel measuring c. 1-2m wide.
 - Ditch 6: Largely similar to D5 with ditch partially within tree groups/fairways. With intermittent gaps where golf green is present. Steep, but small banks with channel measuring c. 1-2m wide.
 - Ditch 7: Wide ditch measuring c 2-3m in width. Banks covered by dense scrub vegetation towards southern end. Emergent vegetation is limited with duckweed *Lemna* sp. present.
 - Ditch 8: Dry, shallow ditch with large amounts of scrub vegetation present including hawthorn and bramble.
 - Ditch 9: Dry ditch, located along central track measuring c. 1-2m in width with no aquatic vegetation present. Grass species observed within channel along with bristly ox-tongue *Picris echinoides* and doves-foot crane's-bill *Geranium molle*.
 - Ditch 10: Largely similar to D9, located on adjacent side of track. Small amount of canary reed-grass *Phalaris arundinacea* present, suggesting ephemerally wet.
 - Ditch 11: Wet, shallow ditch with wide channel measuring 2-5m. Largely overshadowed by bankside trees. Duckweed observed with substantial wood debris and leaf litter present.
 - Ditch 12: Wet ditch with steep sides and channel measuring c. 1-2m. Heavily managed with no marginal or bank side towards northern extent, less managed towards southern extent with aquatic species present.
 - Ditch 13: Dry, shallow ditch with no marginal vegetation.
- 5.16 Further to the ditches above there is a network of short ditch sections, largely within the tree groups or along hedgerows. The majority of these are damp/dry though some did hold water at the time of survey and it is thought that they are likely to be ephemerally wet.
- 5.17 Aquatic/marginal species present in the ponds/ditches included yellow iris *Iris pseudacorus*, reed canary grass, common reed, lesser bulrush *Typha angustifolia* and the Schedule 9 invasive non-native species parrot's-feather. Species present along the drain corridors include cow parsley *Anthriscus sylvestris*, false oat-grass, grey sedge *Carex divulsa*, spear thistle *Cirsium vulgare*, common nettle *Urtica dioica*, bittersweet *Solanum dulcamara*, great willowherb *Epilobium hirsutum*.
- 5.18 Two of the three ponds present on-site (P2, and P3) are associated with the on-site drains. P1 is situated within the fairway as part of the landscaping. P4 is located off-site abutting the northern boundary of the Site. All support aquatic/marginal plant species, further details are provided below:

- Pond 1: c. 15 x 8m, large amount of aquatic/emergence vegetation present including lesser bulrush, water mint *Mentha aquatica* and the invasive parrot's-feather.
- Pond 2: c. 15 x 10m, located at end of wet drain running along northern site boundary, largely shaded and heavily vegetated with common reed and duckweed, with some additional aquatic/marginal vegetation present including fool's-water-cress *Apium nodiflorum*, yellow iris and water mint.
- Pond 3: c. 10 x 4m, located at end of ditch 2 in south of site, partially shaded, aquatic/marginal species present including common reed, soft-rush *Juncus effusus*, yellow iris, water forget-me-not *Myosotis scorpioides* and parrot's feather.
- Pond 4: c. 10 x 6m, located at northern end of ditch 1 on northern site boundary. Heavily shaded by the large amount of aquatic/marginal vegetation present including common reed, water mint, and great willowherb.

- 5.19 The Lidsey Rifle comprises a slow-flowing watercourse, which gently meanders south, aquatic/marginal species present in the Lidsey Rifle include yellow iris and starwort *Callitriche sp.* The banks and margins of the watercourse are heavily vegetated with common reed and these directly back onto the heavily managed fairways. Other bankside vegetation species includes hemlock water-dropwort *Oenanthe crocata*, great willowherb, greater burdock *Arctium lappa*, common nettle, teasel *Dipsacus fullonum*, bittersweet and black bryony *Tamus communis*. Scattered scrub included dog-rose *Rosa canina*, bramble, blackthorn *Prunus spinosa* and elder *Sambucus nigra*.

Ruderal Vegetation

- 5.20 There are small discrete pockets of ruderal vegetation on site in areas not managed intensively by the golf course. Species present include common nettle, prickly sow thistle *Sonchus asper*, greater burdock, hemlock *Conium maculatum* and hogweed.

Scattered Scrub

- 5.21 Individual specimens of scattered scrub were present around the site which were represented by elder and butterfly-bush *Buddleja davidii*; with a small patch of snowberry *Symphoricarpos albus* present in the south-east where it was encroaching from offsite garden planting.

Hardstanding/Buildings

- 5.22 There are eight buildings on site, mostly in the south-east corner, comprising the golf club reception and smaller facilities buildings and sheds. These are discussed in more detail with regards to their suitability to support roosting bats within the accompanying bat report (FPCR 2021).
- 5.23 In the south-east of the site, adjacent the buildings there is an area of hardstanding constituting the car park. There is also a small area of hardstanding in the centre of the site which is used by facilities/maintenance.

Invasive Species – Japanese Knotweed *Reynoutria japonica* and Parrot's-Feather

- 5.24 Two stands of Japanese knotweed (JK) were recorded on site. One stand was located on the eastern boundary of the carpark incorporated into hedgerow H13 (Target Note 1, *Figure 2*). The

stand was approximately 2m x 1m which was likely larger previously as there was evidence of the ground being dug/scraped which has resulted in c. 11 new growths in the soil bank.

- 5.25 The other stand of JK was located in the north-east of the site on the edge of ditch 5 (Target Note 2, *Figure 2*), and measured c. 3m x 2m and was c. 2 – 2.5m tall. This stand was partially engulfed in in ruderal / scrub vegetation including common nettle and bramble.
- 5.26 Parrot's-feather is an aquatic invasive species which was identified within Pond 1, Pond 3 and Ditch 3a.

6.0 DISCUSSION AND RECOMMENDATIONS

- 6.1 The proposals have been assessed against the current ecological baseline to review the potential impacts anticipated and to provide recommendations for mitigation, compensation and/or ecological enhancement where appropriate. This report aims to provide an early assessment based on surveys undertaken and employing a precautionary approach. Further assessment and recommendations will be provided within updated protected species reports. The assessment of impacts and recommendations for mitigation are based on indicative proposals for the development.

Desk Study

Statutory Designated Sites

Nationally Designated Site of Nature Conservation Importance

- 6.2 The closest internationally designated site is the Solent and Dorset Coast SPA which is located approximately 1.5km south of the site. Site A falls within the nitrate vulnerability zone for surface water for Aldingbourne Rife, which joins the Lidsey Rife approximately 600m downstream of the site and flows south before discharging into the sea within the Solent and Dorset SPA designation. It is anticipated that the use of land as a golf course would limit the amount of nutrient released as a baseline, and as a large degree of the proposed development will consist of residential dwellings, this will limit any further accumulation.
- 6.3 During the construction phase temporary drainage measures will be implemented to ensure sediment and increases in water levels do not increase pre-development rates. This will follow a CEMP implementing the Guidance for Pollution Prevention (GPPS) and Pollution Prevention Guideline (PPG) as appropriate.
- 6.4 It has been confirmed that Lidsey Waste Water Treatment Works (WWTW) has capacity to deal with the sewage produced by this development. Alternatively, there is also option to connect to Ford WWTW which will ensure discharges meet Southern Water's permit to ensure no adverse environmental impacts. On-site water quality will be managed within the Sustainable Urban Drainage Systems (SuDS) and outfalls. The emitted nutrients from the site will be lower than the current levels, and dispersal/dilution once it enters the sea will not be at levels that would affect the foraging resources for designated species at the SPA.
- 6.5 The next closest internationally designated site is Pagham Harbour SPA/SAC/SSSI, which is located c. 7.2 km to the south-west of the site. The zone of influence for Pagham Harbour is stated as 5km within the Arun Valley Local Plan (Policy ENV DM2), and therefore, as the site lies outside of the zone of influence, consequently no significant impacts are predicted upon this SPA/SAC/SSSI.
- 6.6 Six other internationally designated sites were identified within the 15km search area, however, as the site is at least 11km from any of them and is outside of their zone of influence, no significant impacts are expected from the proposed residential development.

Non-Statutory Designated Sites

- 6.7 The provision of onsite green infrastructure within the scheme, including play areas, footpaths/cycleways, formal and informal open space will absorb the majority of the increase in

resulting recreational pressure from the new inhabitants. In addition there are no direct footpaths linking the site to the LNR and the presence of major roads (A29 and A259) will limit the recreational pressures.

Habitats

- 6.8 The majority of habitats present within the Site are limited both in their range and diversity due to account of the site's purpose (golf club) and intensively managed nature.

Grassland

- 6.9 The dominant habitat on site, intensively managed amenity grassland, which is of negligible ecological value and the loss of this habitat in itself is not significant. Small areas of semi-improved grassland located within and around the peripheries of the woodlands are also proposed to be lost which no more than site value due to the more diverse composition and varying sward heights.
- 6.10 In order to compensate for the areas of grassland which will be lost, extensive areas of grassland will be incorporated into the scheme design, particularly on the western side following the Lidsey Rife and the new SUD that are to be created. The GI is to be designed to include informal areas where species-rich grassland will be created for biodiversity benefit. This will be managed through a traditional hay meadow cutting regime, involving a single cut in late summer/early autumn. Tussock grassland will be encouraged to establish in more peripheral areas particularly around the ditches/Lidsey Rife, along hedgerows/woodland as this will provide commuting habitat and cover for small mammals, reptiles and amphibians, which in turn will forage upon invertebrates using the nectar sources present in hedgerows and species-rich grassland.

Broadleaved and Mixed Plantation Woodlands

- 6.11 The resource of mature trees within the woodlands provides local value owing to their age and structure, offering foraging and commuting resources for the local fauna. The majority of mature trees on site will be retained within the proposals, however, a small amount of woodland will be lost to facilitate the development in the eastern regions of the site. Extensive tree planting is proposed within the GI, in particular in the northern and western extent of the site which will compensate for the loss.

Hedgerows

- 6.12 The 13 hedgerows onsite were assessed under the HEGS criteria with four assessed as having high (Grade 1) value, two as having moderately high to high (Grade 2) value, six were moderate (Grade 3) and one low (Grade 4) value.
- 6.13 Six hedgerows (H1, H2, H3, H4, H5 and H7) were considered to be 'Important' under Hedgerow Regulations 1997 and were all considered to be a HPI on account of it supporting >80% native woody species. All six 'important' hedgerows will be retained within the proposed development.
- 6.14 The majority of hedgerows will be retained and enhanced through proposals. To compensate for small losses in hedgerows to facilitate access, additional native species-rich hedgerows will be planted, and existing hedgerows will be 'gapped' up in order to provide enhancements.
- 6.15 Where possible management should be on a three-year rotational basis, however, as some of the hedgerows are on residential boundaries it is understood that this may not be achievable for all

hedgerows. To maximise the biodiversity value of the hedgerows and create a buffer where adjacent to the development/footpaths, the retention/creation of species rich grassy verges (at least 2m width) alongside hedgerows is recommended. A diverse ground flora is a key aspect of hedgerow biodiversity, offering suitable foraging/commuting habitats for terrestrial species including reptiles, amphibians and mammals.

- 6.16 During construction works, all retained woodland habitats, hedgerows and trees will be protected through the implementation of appropriate measures including root protection areas and protective fencing in accordance with BS 5837 (2012) Trees in Relation to Design, Demolition and Construction and/or as indicated by any Arboricultural Assessment.

Waterbodies and Riparian Habitats

- 6.17 Ponds P1 and P3 will all be lost to facilitate the development, however, to compensate for this loss, SuDs will be created in the western extent of the site within the GI. The northern most basin measuring c. 0.36ha, will hold water permanently throughout the year with at least a third coverage, while the central feature c. 0.14ha will hold water year round to approximately 50% of its capacity; the southern most basin will only hold water during storm events and will quick disperse. The two northern basins will have opportunities to maximise biodiversity value with wide shallow draw down zones, scalloped edges and deep central areas. The waterbodies will be planted with locally native marginal and aquatic vegetation, including species such as soft-rush *Juncus effusus* and purple loosestrife *Lythrum salicaria* around the edges, with tall emergent plants and floating-leaved plants such as yellow water-lily *Nuphar lutea* within the deeper areas of water. The SuDs can be made more visually attractive through the planting of selected species including marsh marigold *Caltha palustris*, water dock *Rumex hydrolapathum* and common water plantain *Alisma plantago-aquatica*.
- 6.18 The majority of the ditches throughout the site will be retained and enhanced through removal of dense scrub and tall ruderal vegetation, scalloping of some banks, as well as lining where possible to improve water retention throughout these habitats. It is recommended that additional planting within these ditches with marginal and aquatic species will create diverse communities throughout the ditch system.
- 6.19 A new network of ditches is proposed within the GI in the northern and western extent of the Site. These will be created with biodiversity in mind and will include creation of banks with a variety of profiles to include marginal shelves and areas of bank at 45° to provide suitable burrowing opportunities for water vole. Aquatic vegetation will also be established including grasses rushes, sedges, reeds and herbs to provide diversity and suitable foraging opportunities for the local wildlife.

Invasive Species

- 6.20 Two invasive plant species (Japanese knotweed and Parrot's feather) have been identified within the site. These species are as listed under Section 14 and Schedule 9 of the Wildlife and Countryside Act 1981 (*as amended*) this makes it an offence to plant or otherwise cause these species to grow in the wild. The removal of these species will further increase biodiversity of the site.
- 6.21 If left untreated these species will spread and have a negative impact on biodiversity across the site and potentially the local area. It is therefore necessary that a specialist invasive weed

contractor is contacted prior to commencement of works to treat or remove the invasive plant stock and dispose of contaminated soil in an appropriate manner as per EA guidelines.

Enhancement Opportunities

- 6.22 The proposed green infrastructure provides a range of opportunities for additional habitat creation and faunal species measures that will provide ecological benefits to the Site.

Habitats

- 6.23 The incorporation of the following additional measures have been designed into the proposals to aim for further improvements including:

- Grasslands to be enhanced through additional species-rich seed mixes of local provenance or mixes added that are similar such as Emorsgate EM1 meadow mixes and where a tussock areas are preferred this will be managed accordingly to ensure a short thatch;
- Retained sparse woodland compartments, that made up areas of 'roughs' will be enhanced through additional tree planting with native broadleaved and coniferous trees species, as well as native shrub species bearing a variety of fruit, nut and seeds.
- Any woodland areas considered to be dense and overcrowded in structure will be enhanced through thinning of mature trees and woodland edge vegetation to create glade formation and promote better light penetration to the woodland ground flora layer.
- All woodlands to be seeded with additional woodland ground floral species, to enhance the ground flora diversity within these woodland habitats.
- Hedgerows will be retained throughout the site, and enhanced through additional woody species planting including tree standards to increase diversity. All hedgerows around the site where possible should be managed appropriately, including creation of at least 2m grassland buffers either side of the hedge, as well as annual cutting to maintain the structural integrity of this linear feature. Where gaps are required for access purposes, these should be kept as minimal as possible to ensure connectivity can be maintained for bats and bird species.
- The three proposed attenuation ponds have been designed to balance the drainage and biodiversity requirements with wide shallow draw down zones, scalloped edges and deeper water areas. The waterbodies should be planted with locally native marginal and aquatic vegetation, including species such as soft-rush and purple loosestrife around the edges, with tall emergent plants and floating-leaved plants such as yellow water-lily *Nuphar lutea* within the deeper areas of water. The implementation of such habitats will be dependent on the final design and input from the drainage consultant to ensure that water can be present year-round.
- Urban areas to incorporate areas of amenity grassland and planting bed, to provide green corridors throughout the urban landscape. Planting beds should include a variety of native and non-native herbs, shrubs and trees to create three dimensional diverse structures which can be used by pollinators, as well as urban fringe bird, bat and mammal species.
- Where possible all footpaths throughout the GI should be created and maintained as informal mown grassland strips. Where there is a requirement for a more formal structure to be put in place, these footpaths should be constructed using a permeable surface including gravel or grasscrete to allow disturbed vegetation communities to develop.

Biodiversity Net Gain

- 6.24 Taking into account the above habitat enhancements and creation measures, there will be a habitat net gain score of 10.29%, hedgerows 17.43% and rivers 46.95%, which meets the requirements of the Environment Act (2021). *Appendix B* details this calculation process, and identifies the assumptions made for each habitat proposed. This calculation will need recalculating at the Reserved Matters stage where more detail can be fed into the metric.



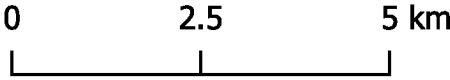
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Key

-  **Site Boundary**
-  **1km buffer**
-  **2km buffer**
-  **15km buffer**
-  **Local Nature Reserve (LNR)**
-  **Site of Specific Scientific Interest (SSSI)**
-  **Special Protection Area (SPA)**
-  **Special Area of Conservation (SAC)**
-  **RAMSAR Site**

- 1. The Brooks (LNR)
- 2. Felpham (SSSI)
- 3. Solent and Dorset Coast (SPA)
- 4. Pagham Harbour (SPA, RAMSAR)
- 5. Chichester and Langstone Harbours (SPA, RAMSAR)
- 6. Arun Valley (SPA, SAC, RAMSAR)
- 7. Solent Maritime (SAC)
- 8. Duncton to Bignor Escarpment (SAC)
- 9. Singleton and Cocking Tunnels (SAC)
- 10. Kingley Vale (SAC)





Hallam Land Management
Bognor Regis Golf Course,
Bognor Regis

DESIGNATED SITES PLAN

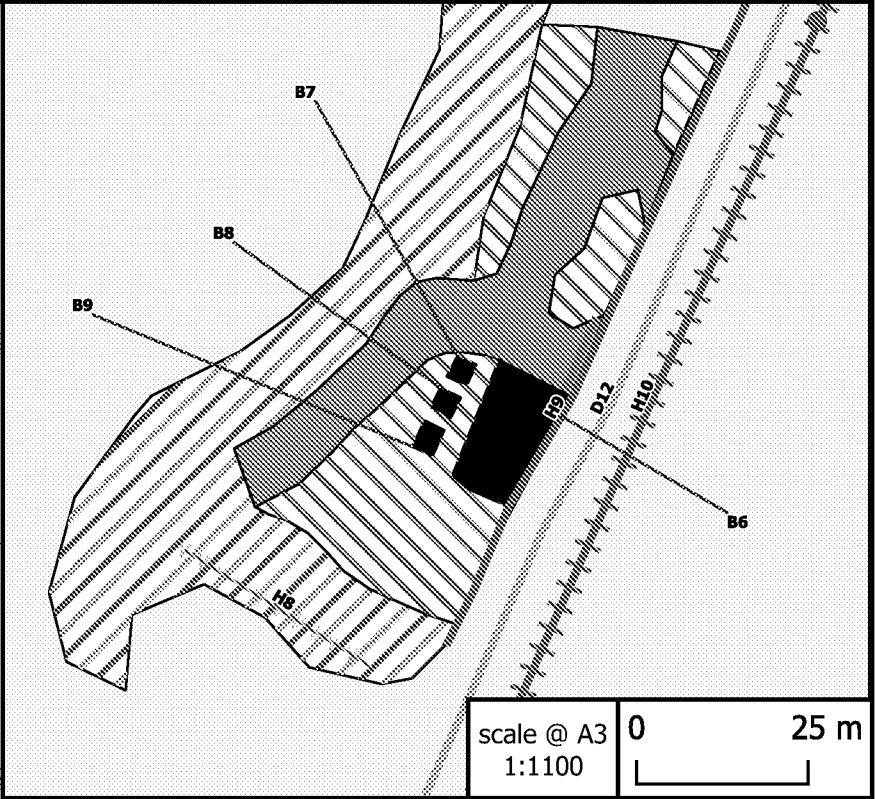
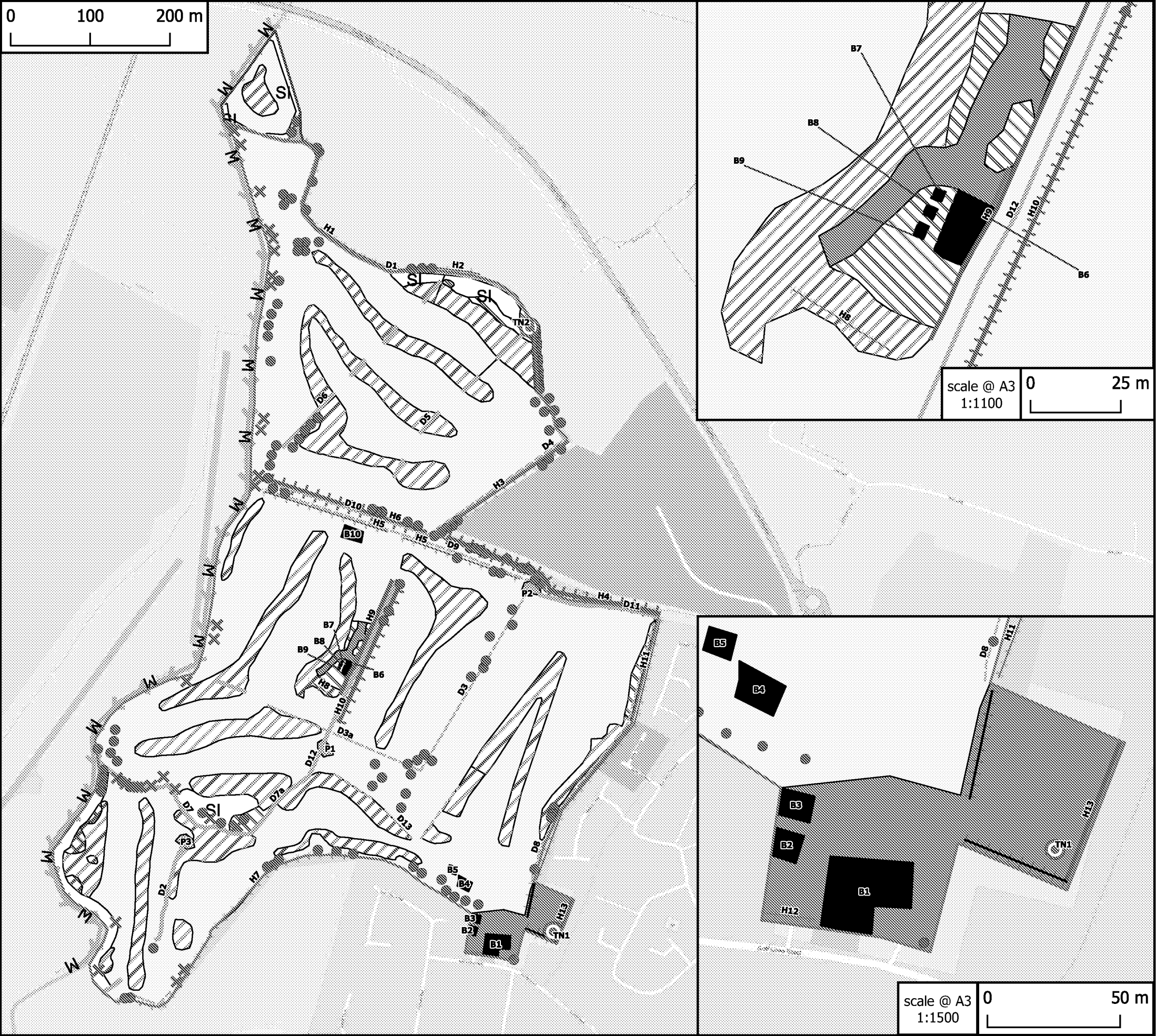
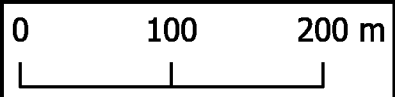
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Figure 1

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issue
23/11/2021



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Key

- Site Boundary
- Additional Survey Area Boundary
- Built Environment: Buildings/hardstanding
- Buildings
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Standing water
- Scrub - dense/continuous
- Other tall herb and fern - ruderal
- Coniferous woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Poor semi-improved grassland
- Standing water
- Running water - mesotrophic
- Wall
- Hedges: Introduced shrub
- Intact hedge - species-poor
- Hedge with trees - species-poor
- Hedge with trees - native species-rich
- Fence
- Dry ditch
- Scrub - scattered
- Target note
- Broadleaved tree



Hallam Land Management
Bognor Regis Golf Course,
Bognor Regis

PHASE 1 HABITAT PLAN

scale @ A3
1:5000

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14/12/2021

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Figure 2

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masterplanning ☎ environmental assessment ☎ landscape design ☎ urban design ☎ ecology ☎ architecture ☎ arboriculture

Appendix A: Botanical Species List

Scientific Name	Common Name	Amenity Grassland	Ponds	Ditches	Tea Greens	Lidsey Riffle			Woodland
						Aquatic	marginal	bankside	
<i>Acacia sp.</i>	Acacia sp.								✓
<i>Acer campestre</i>	Field maple								✓
<i>Achillea millefolium</i>	Yarrow	✓						✓	
<i>Aesculus hippocastanum</i>	Horse chestnut								✓
<i>Agrostis stolonifera</i>	Creeping bent		✓						
<i>Alliaria petiolata</i>	Garlic mustard			✓					
<i>Alnus glutinosa</i>	Alder								✓
<i>Alopecurus pratensis</i>	Meadow foxtail	✓						✓	
<i>Anisantha sterilis</i>	barren brome							✓	
<i>Anthriscus sylvestris</i>	Cow parsley			✓				✓	✓
<i>Apium nodiflorum</i>	fools watercress		✓						
<i>Arctium lappa</i>	Greater burdock							✓	
<i>Arctium sp.</i>	Burdock sp.								✓
<i>Arrhenatherum elatius</i>	False oat grass			✓				✓	✓
<i>Arum maculatum</i>	Cuckoo-pint								✓
<i>Bellis perennis</i>	Daisy	✓							
<i>Brachypodium pinnatum</i>	Tor grass								✓
<i>Brachypodium sylvaticum</i>	False brome			✓				✓	✓
<i>Callitriche sp.</i>	Starwort sp.			✓		✓			
<i>Calystegia sepium</i>	Hedge bindweed			✓				✓	
<i>Cardamine sp.</i>	Bittercress sp.			✓					

<i>Carex divulsa</i>	Grey sedge			✓					
<i>Carex otrubae</i>	False Fox Sedge		✓	✓					
<i>Carex remota</i>	Remote sedge			✓					
<i>Centaurea nigra</i>	Common knapweed	✓							
<i>Cirsium arvense</i>	Creeping thistle	✓	✓					✓	
<i>Cirsium vulgare</i>	Spear thistle			✓				✓	✓
<i>Conium maculatum</i>	Hemlock			✓				✓	
<i>Coronopus squamatus</i>	Swinecress	✓							
<i>Crataegus monogyna</i>	Hawthorn							✓	✓
<i>Cruciata laevipes</i>	Crosswort			✓					
<i>Cupressus leylandii</i>	Layland cyprus								✓
<i>Cynosurus cristatus</i>	Crested dogs tail	✓							
<i>Dactylis glomerata</i>	Cocksfoot	✓						✓	
<i>Dioscorea communis</i>	Black byrny							✓	
<i>Dipsacus fullonum</i>	Teasel							✓	✓
<i>Epilobium hirsutum</i>	Great willowherb			✓				✓	
<i>Epilobium sp.</i>	Willowherb sp.		✓	✓					
<i>Equisetum arvense</i>	Common horsetail								✓
<i>Filipendula ulmaria</i>	Meadowsweet			✓					
<i>Fraxinus excelsior</i>	Ash								✓
<i>Galium aparine</i>	Common Cleavers		✓	✓				✓	✓
<i>Galium aparine sp.</i>	Water Cleavers		✓						
<i>Geranium dissectum</i>	Cut-leaved crane's bill			✓				✓	
<i>Glechoma hederacea</i>	Ground ivy				✓				✓
<i>Glyceria sp.</i>	Sweet grass		✓	✓					
<i>Hedera helix</i>	Ivy							✓	✓
<i>Hedera helix 'Duckfoot'</i>	Ivy 'Duckfoot'								✓
<i>Heracleum sphondylium</i>	Hogweed	✓		✓	✓			✓	✓

<i>Holcus lanatus</i>	Yorkshire fog	✓		✓					
<i>Hyacinthoides x massartiana</i>	Hybrid bluebell								✓
<i>Iris Pseudacorus</i>	Yellow flag iris		✓	✓			✓		
<i>Juncus effusus</i>	Soft rush			✓					
<i>Juncus inflexus</i>	Hard rush		✓						
<i>Lamium album</i>	White dead nettle							✓	✓
<i>Lemnaceae sp.</i>	Duckweed sp.			✓					
<i>Lolium perenne</i>	Perennial rye grass	✓							
<i>Lycopus europaeus</i>	Gypsywort		✓						
<i>Matricaria recutita</i>	Scented mayweed			✓					
<i>Mentha aquatica</i>	Water mint		✓	✓					
<i>Myosotis scorpioides</i>	Water Forget-me-not		✓	✓					
<i>Myriophyllum aquaticum</i>	Parrot's feather		✓	✓					
<i>Oenanthe crocata</i>	Hemlock water dropwort			✓				✓	✓
<i>Pastinaca sativa</i>	Parsnip			✓					
<i>Phalaris arundinacea</i>	Reed Canary Grass			✓					
<i>Phragmites australis</i>	Common reed		✓	✓D/O			✓		
<i>Picris echioides</i>	Bristly ox-tongue		✓					✓	
<i>Pinus sylvestris</i>	Scots pine								✓
<i>Plantago lanceolata</i>	Ribwort plantain	✓	✓						
<i>Plantago major</i>	Greater plantain	✓							
<i>Poa annua</i>	Annual meadow grass	✓							
<i>Poa nemoralis</i>	Wood meadow grass		✓						
<i>Poa trivialis</i>	Rough meadow grass	✓						✓	
<i>Populus nigra 'Italica'</i>	Lombardy Poplar								✓
<i>Populus tremula</i>	Aspen								✓
<i>Potentilla reptans</i>	Creeping cinquefoil	✓							
<i>Prunella vulgaris</i>	Selfheal	✓							✓

<i>Prunus sp.</i>	Cherry							✓	✓
<i>Prunus spinosa</i>	Blackthorn							✓	✓
<i>Pulicaria dysenterica</i>	Common fleabane		✓						
<i>Quercus ilex</i>	Holm oak								✓
<i>Quercus robur</i>	English oak								✓
<i>Ranunculus repens</i>	Creeping buttercup	✓							✓
<i>Ranunculus sceleratus</i>	Celery leaved buttercup			✓				✓	
<i>Ranunculus sp.</i>	Crowfoot sp.			✓					
<i>Rhamnus cathartica</i>	Buckthorn							✓	✓
<i>Rubus fruticosus</i>	Bramble			✓				✓	✓
<i>Rumex acetosa</i>	Common sorrel		✓						
<i>Rumex crispus</i>	Curled dock	✓							
<i>Rumex obtusifolius</i>	Broad-leaved dock							✓	✓
<i>Rumex sanguineus</i>	Wood dock		✓	✓				✓	✓
<i>Rumex sp.</i>	Dock sp.		✓						
<i>Salix caprea</i>	Goat willow								✓
<i>Salix cinerea</i>	Grey willow								✓
<i>Salix fragilis</i>	Crack willow								✓
<i>Sambucus nigra</i>	Elder							✓	✓
<i>Senecio jacobaea</i>	Common ragwort		✓						
<i>Silene dioica</i>	Red campion			✓				✓	✓
<i>Sisymbrium officinale</i>	Hedge mustard			✓				✓	
<i>Solanum dulcamara</i>	Bittersweet			✓				✓	
<i>Sonchus asper</i>	Prickly sow thistle			✓				✓	✓
<i>Sorbus aria,</i>	Whitebeam								✓
<i>Sorbus aucuparia</i>	Rowan								✓
<i>Stachys sylvatica</i>	Hedge woundwort			✓					
<i>Taraxacum officinale</i>	Dandelion	✓							

<i>Tilia sp.</i>	Lime sp.								✓
<i>Trifolium dubium</i>	Lesser hop trefoil		✓						
<i>Trifolium pratense</i>	Red clover		✓						
<i>Trifolium repens</i>	White clover	✓							
<i>Typha latifolia</i>	Bulrush		✓						
<i>Urtica dioica</i>	Common nettle			✓ O/D				✓	✓
<i>Veronica persica</i>	Common field speedwell								✓

APPENDIX B: BIODIVERSITY NET GAIN CALCULATIONS