



Rook Farm,
Hayling Island

Brent Goose Mitigation Strategy

Prepared by
CSA Environmental

on behalf of
Gladman Developments Ltd

Report No: CSA/4956/09

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This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

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CONTENTS	Page
1.0 Introduction	2
2.0 Baseline Conditions	4
Habitats	4
Desk Study	4
Baseline Surveys	5
3.0 Development Effects	8
4.0 Mitigation Strategy	10
Policy and Guidance	10
Proposed Refuge Site	11
Funding, Ownership and Responsibilities	18
Management and Monitoring	19
5.0 Conclusion	21
6.0 References	22

Appendices

Appendix A: Refuge Site Habitats Plan

Appendix B: Refuge Site Photographs

Appendix C: Refuge Site Strategy Plan

1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Gladman Developments Ltd (hereafter, 'The Applicants'). It sets out a strategy to address impacts on dark-bellied brent geese *Branta bernicla bernicla* associated with nearby European site designations which could otherwise occur at Rook Farm, Hayling Island (hereafter 'the Site'). Residential development is proposed at the Site, for which an outline planning application has been made to Havant Borough Council (APP/21/01434).
- 1.2 The Site occupies an area of c. 11.77ha and is located around central grid reference SZ 7192 9978, in South Hayling. It comprises two arable fields with margins of semi-improved grassland, a large area of semi-improved grassland and scrub parcels to the east, and a central pond and farm building. The Site is bounded by residential properties to the south and east, open greenspace adjoining Hayling Island Holiday Park to the west, and an agricultural field connected to the grounds of the Church of St Marys to the north.
- 1.3 The proposed development is to comprise up to 300 dwellings (including affordable housing) and is to include *"provision for structural planting and landscaping; informal public open space; children's play areas; sustainable drainage system (SuDS); a new vehicular access from St Mary's Road; and associated ancillary works."* All matters are reserved except for means of vehicular access.
- 1.4 The proposals fall under Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017. As Havant Borough Council (HBC) considered the development is likely to have significant effects on the environment by virtue of factors such as its nature, size or location, a statutory Environmental Impact Assessment (EIA) was required. The application was therefore supported by an Environmental Statement (ES), Chapter 7 of which addressed matters of ecology and nature conservation. This was based upon an Ecological Impact Assessment (EclA; ES Appendix 7.1; CSA/4956/05) and shadow Habitats Regulations Assessment (sHRA; ES Appendix 7.2; CSA/4956/06).
- 1.5 Following validation of the outline planning application in January 2022, consultation responses have been provided by Hampshire County Council (HCC) Senior Ecologist, the Hampshire and Isle of Wight Wildlife Trust (HIWWT), the Royal Society for the Protection of Birds (RSPB) England and Natural England. Each consultee placed a holding objection on the application; in each case in view of the then outstanding baseline winter bird survey data, and details of the proposed off-site mitigation to ensure the continued favourable conservation status of brent geese. The purpose of this document is to provide this information.

- 1.6 The present version (Revision D) of this Strategy responds to feedback that has been received from HBC and Natural England; directly sought by the Applicants and CSA Environmental under Natural England's charged Discretionary Advice Service (27 April 2023) as well as their updated consultation comments on the planning application (10 July 2023).

2.0 BASELINE CONDITIONS

Habitats

- 2.1 Baseline habitat conditions at the Site are described in the EclA, further to a baseline survey under the UK Habitat Classification (UK Hab) method by CSA Environmental in August 2021. Cultivated cropland fields are the dominant habitat present, which were planted with a broad bean crop at the time of survey. A large area of semi-improved grassland lies to the east of the Site in the position of a former allotment garden. A Habitats Plan is available at Appendix A of the EclA (CSA/4956/103).

Desk Study

- 2.2 Extensive survey work has been undertaken into the relationship between individual terrestrial sites and the protected designations of the Solent complex, as well as their use by brent geese and other bird species, as reported within the Solent Waders and Brent Goose Strategy (SWBGS). The principal objective of the SWBGS is to inform decisions relating to strategic planning as well as individual development proposals, to ensure that sufficient feeding and roosting resources continue to be available and the integrity of the network of sites is restored and maintained, in order to ensure the survival of the Solent's coastal bird populations (Whitfield, 2020). The Strategy identifies the network of terrestrial sites around the Solent and classifies them according to their value to the waders and brent geese, as part of a framework to establish mitigation measures:

- Core Area
- Primary Support Area
- Secondary Support Area
- Low Use Site

- 2.3 A desktop study exercise undertaken to inform the EclA established, through records obtained from the Hampshire Biodiversity Information Centre (HBIC), that populations of dark-bellied brent goose have previously been recorded within the Site, with a peak count of 1100 individuals feeding during the winter of 2017. As a result, the entirety of the Site is adopted as a 'Core Area' under the SWBGS.

- 2.4 Conversely, winter bird surveys carried out at the Site by Ecology Solutions Ltd in 2017/18 concluded that, at the time of the surveys, the overall habitat was unsuitable for brent geese as the arable fields had been recently ploughed, leaving expansive bare ground, and no brent geese were recorded during the surveys. This exemplifies that the presence of brent geese is wholly dependent upon the management of any site, particularly the status of the arable fields over the course of the

winter season, with stubble or short improved grassland habitat being preferred. The absence of control over such management of privately owned and farmed land, which is functionally linked to the Solent designations, therefore represents an ongoing threat to the conservation status of the associated bird species.

Baseline Surveys

Methods

- 2.5 Eight wintering bird survey visits were carried out at the Site between November 2021 and March 2022 to provide an updated assessment of the Site's importance for birds during the winter. During this time there is reduced territoriality and the formation of wide-ranging, mixed-species flocks that can cause significant variation in species diversity and bird numbers on a daily basis. In addition, weather factors, such as snow cover, can also result in the movement of birds to or from an area.
- 2.6 The surveys were completed by Andy Johnson, a locally based specialist ornithologist, and the conduct of the fieldwork was commensurate with good ornithological practice. The purpose of the survey was to assess the composition of the wintering bird community within the Site, the population size of each species present and the species distribution within the survey area. In doing so, the surveys provided an updated assessment of the status of the Site as functionally linked land, providing supporting habitat for brent geese associated with nearby European site designations.
- 2.7 Survey work also focused on determining the presence/likely absence of any protected or notable species of National, Regional or Local conservation importance, and to determine whether any populations of such species are significant at a local or wider level, with a particular focus on brent geese. Data provided on the distribution of species within the survey area indicates the importance of parts of the Site to each bird species and to birds in general.
- 2.8 The survey methodology adopted follows the standard Common Birds Census (CBC) method and comprised:
 - Identification of all birds seen and heard with locations of Red and Amber Listed species mapped on a largescale plan, and
 - Records of the total numbers of birds seen
- 2.9 On each survey the surveyor walked a route across the whole Site which ensured that both species of open and boundary habitats would be detected. Alternate versions of the route were taken on each visit so that different parts of the Site would be surveyed at different times of the morning, thus avoiding temporal bias associated with bird activity or other factors such as increasing traffic noise. Surveys commenced between morning and early afternoon, timed to coincide with the high

tide period (so that intertidal habitats were not available to foraging geese, thus ensuring the importance of functionally linked terrestrial sites was not underrepresented). Birds were detected by sound or sight, using a pair of binoculars.

- 2.10 All birds detected at the Site were recorded using standardised codes to map their distribution and behaviour. Records were made of any bird species observed on land adjacent to the survey area or flying over the Site. However, these fly-over species were not included when assessing the importance of the survey area.

Limitations

- 2.11 Only a proportion of individuals of each species will be detected on each visit, and some particularly secretive or low-density species, can be elusive and require several visits to detect. Furthermore, as has already been noted, the importance of a site for birds can change depending on factors such as food availability, presence of roosting features and weather conditions.

Evaluation

- 2.12 The importance of the wintering bird assemblage on the Site was assessed using the criteria suggested by Fuller (1980) (see Table 2 below).

Table 2. Assessment criteria for the wintering bird assemblage at the Site

Importance	Number of Wintering Bird Species
Local	25-54
County	55-84
Regional	85-114
National	115+

Results

- 2.13 A summary of the timing of and survey conditions during the wintering bird surveys is presented in Table 3 below.

Table 3. Weather conditions for wintering bird surveys

Date	Start time	Temp (°C)	Cloud (Oktas)	Wind (Beaufort scale)
13/11/21	08:45	9	7/8	1
04/12/21	11:00	8	1/8	3
25/12/21	14:15	9	8/8	2
03/01/22	12:30	13	8/8	3
23/01/22	14:30	6	8/8	1
07/02/22	14:00	10	6/8	3
19/02/22	12:00	7	8/8	5
05/03/22	12:00	8	7/8	4

- 2.14 A total of 16 species were recorded on or adjacent to the Site during the surveys. Ten species of conservation interest were recorded including one species listed on Schedule 1 of the Wildlife and Countryside Act,

1981 (as amended). The full results of the wintering bird survey are presented in Table 4 below.

Table 4. Birds recorded at the Site during the wintering bird surveys

Systematic List of Species	Nov 13	Dec 4	Dec 25	Jan 3	Jan 23	Feb 7	Feb 19	Mar 5
Black-headed gull <i>Chroicocephalus ridibundus</i> †	26	10			8	45	30	40
Carion crow <i>Corvus corone</i>	1	4				1		19
Common gull <i>Larus canus</i> †	1	16		70		13	6	15
Dark-bellied brent goose			600	500	500			
Feral pigeon <i>Columba livia</i>	3	5				1		
Great black-backed gull <i>Larus marinus</i> †							1	
Herring gull <i>Larus argentatus</i> *§		4	10	30	12	39	40	15
Jackdaw <i>Corvus monedula</i>	2	7	2		1	9		10
Lesser black-backed gull <i>Larus fuscus</i> †							1	
Magpie <i>Pica pica</i>	16	3		2	2	14		15
Meadow pipit <i>Anthus pratensis</i> †	3							
Mediterranean gull <i>Larus melanocephalus</i> †¶						1	3	
Pale-bellied brent goose <i>Branta bernicla hrota</i> †				1				
Skylark <i>Alauda arvensis</i> *								1
Stock dove <i>Columba oenas</i> †	17	17				2	12	10
Wood pigeon <i>Columba palumbus</i> †	3	2				2	2	4

* BoCC Red List ; † BoCC Amber List; § NERC Act Section 41; ¶ W&C Act Schedule 1

- 2.15 Brent geese regularly feed in the northern field at the Site, with 500-600 on three surveys in December and January.
- 2.16 The only other species recorded at the Site were variable numbers of gulls, pigeons and crows, with three migrant meadow pipits in November and a skylark back on territory in March. None of these species occurred in significant numbers and the vast majority of these were recorded in the northern of the two fields.
- 2.17 In accordance with Fuller (1980), the wintering bird assemblage is considered to be of ecological importance at the Local level, however the population of brent geese utilising the Site are considered to be important at the International level.

3.0 DEVELOPMENT EFFECTS

- 3.1 The Site lies in close proximity to the Solent Complex, including the Chichester and Langstone Harbours Special Protection Area (SPA) and Ramsar site c. 750m east of the Site, and further afield the Portsmouth Harbour SPA and Ramsar site and the Solent and Southampton Water SPA and Ramsar site. Comprehensive details on the characteristics of these European sites are provided in the sHRA, including their spatial relationship with the Site, component Sites of Special Scientific Interest (SSSIs), published conservation objectives and any known vulnerabilities or threats to their favourable conservation statuses. In each case however, their qualifying features include the overwintering populations of dark bellied brent geese.
- 3.2 Dark bellied brent geese are attracted to the Solent due to the availability of extensive mudflats associated with the harbours and estuaries, where they can feed on eelgrass and algae, while the wading species tend to feed on invertebrates. At high tide these food sources are unavailable, so the birds will use inland terrestrial sites (such as parks, agricultural and playing fields) to feed and roost. The suitability of terrestrial sites to support these functions is influenced by their distance from the coast, management, visibility, levels of disturbance and proximity to other sites. These terrestrial sites are described as 'functionally linked land' or 'supporting habitat'.
- 3.3 Within the sHRA (CSA/4956/06), it was highlighted that the species forming qualifying features of spatial designations do not restrict their movements or activities to the confines of such a designated area, and that impacts which threaten the viability of a species population will by extension undermine the integrity of an associated designation, regardless of where said impacts occur.
- 3.4 In the case of the subject site, the entirety of the Site is classified as a Core Area under the SWBGS, in view of surveys undertaken in the winter of 2017/18. The updated winter bird surveys undertaken over the winter of 2021/22 by CSA Environmental support this classification, and it is clear that, during years when suitable habitat conditions are available, the Site is capable of fulfilling an important role as supporting habitat for the SPA and Ramsar birds. Following the original publication of this report (Revision A) public comments dated 18 June 2023 have been submitted to HBC, providing supplementary data in the form of "*sightings of Brent Geese that have been submitted by Rook Farm Way residents to HIWWT.*"
- 3.5 In the absence of mitigation, the permanent loss of the on-site habitats as a result of the proposed development therefore has the potential to undermine the conservation status of the dark-bellied brent goose population, and by extension the conservation objectives of the

European sites of the Solent Complex. Under Guidance on Mitigation and Off-setting Requirements produced by the SWBGS Steering Group (2018), any damage to or deterioration of the integrity of Core Areas is considered likely to have a significant effect on the European sites.

4.0 MITIGATION STRATEGY

Policy and Guidance

- 4.1 Havant Borough Council (2022) record that a developing initiative of the SWBGS is the provision of permanent refuge sites for overwintering birds. As much of the existing supporting habitat lies within privately held agricultural land, the location and suitability of supporting habitat is dependent to a large degree on the vagaries of crop rotation practices. This could, it is acknowledged, mean that in any given year there may be no or a minimal amount of supporting habitat available. The establishment of refuges could ensure that suitable habitat is available on a permanent and consistent basis, contributing towards the favourable conservation status of the European sites' qualifying species.
- 4.2 The Site was formerly allocated under the submission version (updated 23/06/2021) of the now withdrawn Havant Borough Local Plan (HBLP) for residential development consisting of c. 390 dwellings (Policy H27). Notwithstanding that the HBLP has been withdrawn, it is understood that the Council continue to support the principle of such allocations. The allocation policy made specific prescription for development to secure the part delivery and implementation of the Hayling Island Brent Goose and Wader Refuge (E26), or alternative provision in perpetuity agreed by the local planning authority, which (as further required by Policy E17):
- Contributes to a biodiversity net gain to the SWBG network;
 - Is of an equal or, where possible, greater size and quality to the Core Area being lost or damaged; and
 - Is secured through a costed Habitat Management and Monitoring Plan.
- 4.3 The Policy went on to state that mitigation/replacement land should be within the locality of, and provided prior to the loss or damage of, the site being proposed for development. The mitigation land should be secured and managed in perpetuity.
- 4.4 Under Guidance on Mitigation and Off-setting Requirements produced by the SWBGS Steering Group (2018), in order for developments impacting Core Areas to demonstrate no adverse effect on the integrity of the relevant European site(s) then a suitable replacement site of an equal, or in some circumstances greater, size and quality must be provided in close enough proximity to the Core Area affected to fully replace its ecological function. It is stated that the freehold or long-term lease (in perpetuity, i.e. 80 year minimum) of the replacement site must be passed to an appropriate conservation body, or the LPA, in a suitable condition, and managed in perpetuity as a nature reserve for waders and / or brent geese. These requirements build upon the mitigation

criteria for the lesser 'Primary Support Areas', which must equally be met, and are summarised as follows:

- Habitat Type – the proposed off-setting site must support habitats, or be suitable for recreating habitats that provide the same, or enhanced, ecological function as those that are to be lost or damaged.
- Disturbance – the ecological function of an off-setting site is likely to be seriously undermined if subject to regular disturbance from recreational use and unmanaged public access.
- Area of habitat – where the replacement habitat would be of equal ecological quality the area required should be of a similar extent to the site being lost or damaged.
- Timing and availability of habitat – operational at the time it is required.
- Geographic location – for ecological reasons of structure and function it is considered appropriate for the off-setting habitat to be provided as close to the original site as practicable.
- The solution should also be capable of being:
 - Validated in respect of achieving its ecological function / purpose; and
 - Monitored for effectiveness; and
 - Adapted to adjust to unfolding circumstances in future management; and
 - Resilient in the face of predictable future pressures such as natural population fluctuations and climate change.

Proposed Refuge Site

- 4.5 In order to mitigate the effects of the loss of the SWBGS Core Area at the Site, it is proposed that a permanent wintering bird refuge site be established on land west of West Lane, Hayling Island, identified in the Refuge Habitats Plan (CSA/4956/104; Appendix A).
- 4.6 An illustrative Refuge Site Strategy Plan (CSA/4956/105) is provided at Appendix C, showing the enhancement measures to be implemented during capital works for the refuge establishment. Detailed prescriptions for habitat creation, enhancement, management and monitoring will be set out in a Habitat Management and Monitoring Plan (HMMP), or equivalent management document, the preparation of which could be secured by planning condition, permission, or planning obligations.

Baseline Conditions

Habitats

- 4.7 An extended Phase 1 Habitat Survey of the proposed refuge site was carried out on 26th July 2021 by Mark Rose MCIEEM and Sophie Vines. Results are described below, and a Refuge Habitats Plan is provided at Appendix A.

- 4.8 The Site comprises a single arable field, which contained an established cereal (wheat) crop at the time of the Phase 1 survey. Field margins exhibited localised variation between tall ruderal and semi-improved grassland dominated swards, however the overall species composition remained relatively constant. Uncultivated margins also varied in width; generally 1-2m. The predominant species present in the margins were common herbs and coarse grasses, including common nettle *Urtica dioica*, hedge bedstraw *Galium mollugo*, perennial ryegrass *Lolium perenne*, false oat-grass *Arrhenatherum elatius*, broadleaved plantain *Plantago major* and prickly sow-thistle *Sonchus asper*.
- 4.9 The proposed refuge site contains and is bounded by numerous seasonally wet drainage ditches. These are present on all aspects of the field except for the eastern boundary along West Lane. A ditch divides the field centrally from east to west.
- 4.10 Structural boundary vegetation on-site varies from scattered tree lines to dense hedgerows. The former is present along Boundaries B1 and B4 and contains primarily mature oak *Quercus robur* with occasional ash *Fraxinus excelsior*, field maple *Acer campestre* and English elm *Ulmus procera*. The hedgerows are all adjacent to ditches, some with standard (generally oak) trees. Boundary B2 is a blackthorn *Prunus spinosa* dominated hedgerow with standard mature oak trees, which connects to the northern edge of Boundary B3. This hedgerow varies from localised scrub dominated vegetation, including bramble *Rubus fruticosus* and gorse *Ulex europaeus*, to a more mature blackthorn hedgerow with elder *Sambucus nigra*, field maple and oak, with occasional gaps.

Brent Geese

- 4.11 The proposed refuge site has been surveyed alongside the Site to understand the current usage of this area by brent geese, and to assess its suitability to support populations under its current management regime. The timings and methods of data collection are provided above.
- 4.12 Nine bird species were recorded at the proposed refuge site during the wintering bird surveys, including 8 of conservation significance. During the surveys, brent geese were found to regularly feed in the northern field (H48C), with 200-1000 in December, February and March. As remarked above, brent geese were also found to feed in the northern field at the Site, with 500-600 on three surveys in December and January. It appears likely that the same birds might make use of both sites, as a large flock was present at one or other locality on all but the first survey, but never at both on the same day. This was further corroborated by a single pale-bellied brent goose being noted within the flock at both sites (the area supports large numbers of dark-bellied brent geese, with pale-bellied brent only a scarce visitor).

Table 5. Birds recorded at the proposed refuge site during the wintering bird surveys

Systematic List of Species (and BTO species code)	Nov 13	Dec 4	Dec 25	Jan 3	Jan 23	Feb 7	Feb 19	Mar 5
Black-headed gull†	1	1		2	34		2	2
Common gull†								6
Curlew <i>Numenius arquata</i> *§		10						
Dark-bellied brent goose†§		800		4		600	1000	200
Golden plover <i>Pluvialis apricaria</i>						5		
Lapwing <i>Vanellus vanellus</i> *§						50		
Mediterranean gull†¶								40
Oystercatcher <i>Haematopus ostralegus</i> †				1				
Pale-bellied brent goose†						1		

* BoCC Red List; † BoCC Amber List; § NERC Section 41; ¶ W&C Act Schedule 1

- 4.13 Other species recorded at the proposed refuge site included generally small numbers of gulls (40 Mediterranean gulls in March were breeding birds returning to Langstone Harbour) and occasional visits from a number of waders (oystercatcher, lapwing, golden plover and curlew), but none of these species appeared to make regular use of these fields during the survey period. All birds at the proposed refuge site were recorded within the northern field, with the exception of the curlews on 4th December.
- 4.14 The results suggest that both SWBGS Core Areas (the Site and proposed refuge site) are important parcels of functionally linked land; each providing a food source for brent geese when the other has been depleted.

Efficacy and enhancements

- 4.15 The (withdrawn) H27 Rook Farm allocation policy required any proposed development to provide a refuge area of at least equal size. It further stated that it was expected that this would be provided as part of the 'Hayling Island Brent Goose and Wader Refuge' as safeguarded by Policy IN1. The proposed refuge site does indeed fall within land which had been allocated by Policy IN1K as part of the Hayling Island Brent Goose and Wader Refuge, therefore the principle of its use for the intended purpose has been accepted and supported.
- 4.16 In their consultation response of 23 July 2023, Natural England confirmed that they are "very supportive of the proposed sites H48C and H48D being secured as a permanent refuge." However, concerns were raised over whether this provision would be sufficient to fully offset the loss of the Site. Natural England required further information to demonstrate:
- That the mitigation provision will provide an enhancement to the SWBGS network.

- The potential uplift & enhancement measures that may be implemented at the proposed refuge site, given its existing Core Area status.
- Certainty as to whether the proposed refuge site can replicate the ecological function of the Site, noting the Site's inland position and associated resilience to climate change.

4.17 The Council's Biodiversity Strategy (January 2019) gives further analysis of land parcels H48C and H48D. It is stated that these large arable fields routinely support large numbers of SPA bird species and, due to their adjacent coastal location, are ideally suited to become permanent refuges. The Biodiversity Strategy draws reference to existing limiting factors to the land's suitability for SPA birds; disturbance during farming operations and by recreational visitors along the Hayling Billy Trail along the western boundary.

4.18 The proposed refuge site is large, flat and low lying; each factor known to positively correlate with suitability for both brent goose and wader inland foraging/roosting. Further analysis of the efficacy and potential for enhancement of the proposed refuge site, against criteria set out within the Guidance on Mitigation and Off-setting Requirements produced by the SWBGS Steering Group set out above (in respect of Core Areas and Primary Support Areas), is presented below.

"A suitable replacement site of an equal, or in some circumstances greater, size and quality must be provided in close enough proximity to the Core Area affected to fully replace its ecological function."

4.19 At c. 14.6ha, the proposed refuge site is c. 24% larger than the Site, and is located in close proximity (c. 1.2km north west). The survey evidence from 2021-22 detailed above, which indicated that the same flocks of geese were using both sites, gives confidence that the proposed refuge site could fully replace the relevant ecological function of the application Site if made reliably available to the wintering birds in perpetuity.

4.20 It is further relevant to note that the application Site represents something of an anomaly in being located inland, with both brent geese and waders displaying a preference for coastal locations (SWBGS, 2020) as in the case of the proposed refuge site. This is likely due to the energetic cost of moving between sites.

"The freehold or long term lease (in perpetuity) of the replacement site must be passed to an appropriate conservation body, or the LPA, in a suitable condition and managed in perpetuity as a nature reserve for waders and / or brent geese."

4.21 It is proposed that this will be the case for the proposed refuge site, with appropriate funding for its in-perpetuity management as a dedicated brent goose and wader refuge also being provided. The precise future

ownership arrangements for the proposed refuge site will be determined in conjunction with the relevant conservation organisation/body.

“Habitat Type – the proposed off setting site must support habitats, or be suitable for recreating habitats that provide the same, or enhanced, ecological function as those that are to be lost or damaged.”

- 4.22 As has been described, the proposed refuge site falls within land allocated by HBC as part of the strategic Hayling Island Brent Goose and Wader Refuge, with the 2019 Biodiversity Strategy remarking that these large arable fields are ideally suited to become permanent refuges.
- 4.23 Like the Site, the proposed refuge site is currently farmed on rotation. Although accepted to routinely support large numbers of SPA bird species, as in the case of the application Site this function is wholly dependent upon the crop cycles in a given year. Their removal from commercial arable agriculture and the securing of their management for the benefit of brent geese and waders in perpetuity therefore represents an opportunity to enhance the reliable availability of suitable terrestrial habitats for these species.
- 4.24 The SWBGS identifies that brent geese prefer short, lush grass for grazing. The HBC Principal Ecologist has further reiterated during consultation that grassland establishment is the preferred habitat provision. It is proposed that arable cultivation cease at the refuge site, with the establishment of such a grassland (perennial rye grass with white clover, or similar) to provide a nutrient rich food source for the foraging geese. This resource will henceforth be available to the geese in perpetuity, with management addressed below.
- 4.25 To further enhance the habitat suitability for waders, a series of shallow scrapes will be created during the capital works to create the proposed refuge site. Scrapes are shallow depressions with gently sloping edges, which seasonally hold water. They create obvious in-field wet features that can support a wide variety of aquatic, terrestrial and aerial invertebrates, and in turn provide important feeding areas for wading birds (and their chicks, in the case of those which stay to breed). A cluster of scrapes, as opposed to a single large one, will be created for maximum biodiversity benefit. They will feature gently sloping margins with irregular outlines, and will be shallow though not to a uniform depth (up to c. 50cm with humps and hollows to maximise microhabitat niches for plants and animals). In view of the low lying and flat topography of the site, the scrapes will be fed by rainfall and surface water run-off, without the need for supplementary artificial water supply. The proposed scrapes are shown indicatively at Appendix C.
- 4.26 In view of the foregoing, it can be concluded that the proposed refuge site is suitable for the creation of habitats that provide an enhanced ecological function relative to those lost at the application Site.

"Disturbance – the ecological function of an off-setting site is likely to be seriously undermined if subject to regular disturbance from recreational use and unmanaged public access."

- 4.27 A limiting factor to the suitability of the application Site for overwintering birds is the regular disturbance from dog walkers using the public right of way that wraps around the western and northern boundaries. Particularly during wintering, there is unrestricted intervisibility between the footpath and open fields of the Site. The opposing southern and eastern boundaries back onto residential properties, from which a degree of disturbance is also likely. Scaring guns can also be used for the protection of commercial crops.
- 4.28 By contrast, although the Hayling Billy Trail extends up the western boundary of the proposed refuge site, it was noted that there was almost no intervisibility during the Phase 1 Habitat survey in July 2021. However, it is acknowledged that intervisibility and the potential for disturbance may increase during the winter months when trees and shrubs are not in leaf. It is therefore proposed that supplementary screening planting be established along the western boundary, in order to provide a natural physical screening to avoid any visual intrusion and minimise auditory disturbance. This is shown indicatively at Appendix C.
- 4.29 Brent geese and waders alike are known to prefer large open sites where they have clear sightlines and visibility. Brent geese in particular do not appear to show aversion to road vehicle disturbance (SWBGS, 2020), and are likely to habituate to such sources of regular auditory/visual intrusion which would not be perceived as a predator threat. As such it is not proposed that hedgerow or other screening planting be established along the eastern boundary of the proposed refuge, at the interface with West Lane. Rather, this along with the other boundaries will be secured by stock proof fencing.
- 4.30 Unlike the application Site, the proposed refuge site shares no boundaries with, and indeed is relatively distant from, any extensive residential land use. Neither are there opportunities for the public to gain access from convenient parking locations. As such, it is not anticipated that issues such as the potential for trespass, vandalism or antisocial behaviour would negatively influence its suitability for the intended purpose, and indeed it represents an improvement on the application Site in this regard.

"Area of habitat – where the replacement habitat would be of equal ecological quality the area required should be of a similar extent to the site being lost or damaged. There may be situations however, where a greater area is required when habitat created may be of poorer quality to that lost or damaged, or there is a high level of risk involved... In all such cases the test will be to ensure the replacement habitats provide a clear and permanent net gain for the target species."

- 4.31 As has been described, the proposed refuge site would secure a greater area and quality of habitat relative to that to be lost at the application Site, thus providing a clear and permanent net gain for both overwintering brent geese and waders.

"Timing and availability of habitat – operational at the time it is required. Essentially, 'in time' to offset the adverse effects which are being addressed, with evidence to show it is functioning and readily available to SPA birds prior to any loss or damage to the original site."

- 4.32 Capital works for all habitat creation at the proposed refuge site will be completed prior to the commencement of development activity, including site preparation works, at the Site. This will ensure that the refuge is available in a suitable condition for brent geese and waders from the first winter season where the impacts have occurred at the Site.

"Geographic location – for ecological reasons of structure and function it is considered appropriate for the off-setting habitat to be provided as close to the original site as practicable."

- 4.33 This criterion is plainly met by the proposed refuge site, and indeed this is corroborated by the apparent presence of the same flocks of geese using both sites (application Site and proposed refuge site) during surveys. Enhancement of the proposed refuge site therefore represents an opportunity to secure in perpetuity the ecological function of the brent goose and wader terrestrial site network.

Resilience to climate change

- 4.34 It has been discussed that the Site is unusual as a Core Area in view of its inland location, with brent geese and waders preferentially selecting sites adjacent to the coast. However, in view of the known threats of climate change and associated sea level rise, the inland position of the Site provides the terrestrial site network with a degree of resilience. It is important therefore that any compensation scheme does not diminish the network's resilience to climate change. Furthermore, in their Discretionary Advice Service response of 27 April 2023, Natural England recommended that mitigation proposals should set out how they align with the Hayling Island Coastal Management Strategy.
- 4.35 The Draft Hayling Island Coastal Management Strategy (2022) sets out a vision to manage coastal flood and erosion risk to the Island for the next 100 years. At Appendix A of the draft Strategy is the Hayling Island Coastal Management Strategy Coastal Processes Study (2020). This

compiles the baseline coastal process understanding for the Hayling Island Coastal Management Strategy, including flood and erosion risk.

- 4.36 Figure 1.3 of the Study shows flood and erosion risk to Hayling Island at the present day, on the basis of a 1 in 200 year flood event. It can be seen that the proposed refuge site is at no risk of flooding, and only minimal risk of erosion at the western boundary. Figure 2.3 of the Study shows how these pressures could change by the year 2120 owing to climate change under a 'do nothing scenario' (i.e. in the absence of further coastal defence mitigations). While the flood risk in this future scenario does indeed expand into the north-western c. 30% of H48C and western c. 20% of H48D, it remains that these model outputs represent a 1 in 200 year flood event. It follows that in the overwhelming majority of years, even when looking 100 years into the future and modelling for the effects of climate change, the proposed refuge site will be available in its entirety to overwintering birds. In those rare years when flooding does occur, the majority of the refuge will remain available to the wintering birds.
- 4.37 It can therefore be concluded that compensation for the loss of the application Site through the enhancement of the proposed refuge site will have no material impact on the resilience of the Solent wader and brent goose terrestrial site network.

Funding, Ownership and Responsibilities

- 4.38 Capital works will include the establishment of grassland pasture, supplementary planting of screening vegetation along the western boundary and creation of shallow scrapes for waders. They will also include the securing of site boundaries with stock proof fencing, creation of a vehicular access and secure parking area off West Lane, as well as any further capital infrastructure required under the conditioned Habitat Management and Monitoring Plan (HMMP) (such as connection to water supply for livestock water troughs). All such capital works required to support the ecological function of the site for brent geese and waders will be fully funded by the developer of the Site.
- 4.39 The developer will furthermore provide funding for the in-perpetuity management of the refuge site. In this context, 'in-perpetuity' is taken to mean a period of 80 years. The HMMP to be secured by planning condition, will be fully costed.
- 4.40 In accordance with Guidance on Mitigation and Off-setting Requirements produced by the SWBGS Steering Group (2018), the freehold or in-perpetuity lease of the refuge site will be passed to an appropriate conservation body.
- 4.41 Following payment of the agreed financial sums to cover capital works and in-perpetuity management, responsibility for delivery will pass from

the developer to the new owner / management organisation. Havant Borough Council could also be given the option of contractual 'step in rights', to be exercised in the event that they consider management to fall short of the agreed HMMP.

Management and Monitoring

- 4.42 In specific reference to the Site, Draft Policy E17 on brent goose and wader feeding and roosting sites identified that suitable replacement habitat should be provided in perpetuity as part of the Hayling Island Brent Goose Refuge. This suitable replacement habitat is to be 'secured through a costed Habitat Management and Monitoring Plan'.
- 4.43 An illustrative Refuge Site Strategy Plan (CSA/4956/105) is provided at Appendix C, showing the enhancement measures to be implemented during capital works for the refuge establishment. Detailed prescriptions for habitat creation, enhancement, management and monitoring will be set out in the HMMP to be secured by pre-commencement planning condition/obligation upon the outline planning permission, which will include full costings. These costings will make provision for ongoing monitoring to ensure the success of the refuge site, and a budget allocation for remedial actions should the monitoring ascertain this to be necessary.
- 4.44 It is proposed that the HMMP will reflect the following actions and management responsibilities:
- **Establishment:** The cessation of arable cultivation and establishment of lush, open grassland. Costs to be met by the developer.
 - Ploughing and harrowing to sterilise the seedbed and prepare for sowing.
 - Creation of a complex of shallow swales, sited in the lowest ground toward the north-west corner, under the direction of an Ecological Clerk of Works.
 - Planting of locally sourced native tree and shrub species to provide supplementary visual screening along the western boundary (c. 6m depth).
 - Sowing of perennial rye grass / white clover mix.
 - **Access & Infrastructure:** The establishment of all supporting infrastructure necessary for the management of the proposed refuge site. Costs to be met by the developer.
 - Creation of a dedicated vehicular access point along the eastern boundary off West Lane. To be served by a small, gated parking area to facilitate management.
 - Stock proof fencing erected to all boundaries.
 - Connection to mains water supply in order to serve livestock water troughs.
 - **Management:** The in-perpetuity management of the grassland and associated infrastructure for the sole purpose of providing a refuge

site for Solent waders and brent geese. To be funded (based on 80 year management term) by the developer.

- Grassland management will be through grazing of livestock, which may be removed between October and March to reduce competition with brent geese.
- No artificial agrochemical inputs (fertilisers or herbicides) to be used at any time.
- Repair and replacement as necessary of fencing and other artificial infrastructure.
- Replacement of any failed tree and shrub specimens planted at western boundary.
- Removal of any colonising scrub/shrubs, and resowing as required to maintain a lush, open grassland.
- Vegetation management at scrapes to prevent establishment of dense marginal vegetation.
- **Monitoring:** To monitor the effectiveness of the proposed refuge site, wintering bird surveys will be completed from the first winter season following establishment. To be funded by the developer.
 - Surveys to follow the standard CBC method, on six occasions per winter season.
 - Monitoring will take place in years 1, 2, 3, 5 and 10.

4.45 It should be noted that there are different options for the management of refuge sites which could be implemented to achieve the targeted function for Solent waders and brent geese. While it is proposed here that the approach will be centred around the establishment and maintenance of grassland, as supported by Havant Borough Council, the HMMP will provide flexibility for the management regime to be altered as necessary in response to the findings of monitoring.

5.0 CONCLUSION

- 5.1 The principal objective of the SWBGS is to ensure that sufficient feeding and roosting resources continue to be available and the integrity of the network of sites is restored and maintained, in order to ensure the survival of the Solent's coastal bird populations (Whitfield, 2020). Consistent with the Council's stated aspirations for a more robust, wider network of refuge sites, the proposed refuge site represents an opportunity to secure a net gain in both the quantity and quality of the network. Moreover, it will ensure the reliable availability, year on year, of suitable terrestrial foraging and roosting habitat for brent geese, rather than this being a matter of circumstance according to the vagaries of crop rotation practices. These factors, together with recent survey evidence, demonstrate that the strategy will fully ensure that the ecological function of the terrestrial site network is preserved, with no diminishment of resilience to climate change.
- 5.2 In addition, dedicated enhancement features for wader species, in the form of complexes of shallow, seasonally wet scrapes, will be incorporated.
- 5.3 The proposed refuge site will be secured in perpetuity, with the management passed to a suitable conservation organisation. All costs associated with land acquisition, capital enhancement works and future management will be met by the developer of the Site.
- 5.4 An illustrative Refuge Site Strategy Plan (CSA/4956/105) is provided at Appendix C, and heads of terms prescriptions for habitat creation, enhancement, management and monitoring have been set out. Detailed prescriptions will be set out in a Habitat Management and Monitoring Plan to be secured by pre-commencement condition/obligation upon outline planning permission.
- 5.5 Implementation of this Strategy will ensure that the proposed development has no adverse effect on the integrity of the European sites associated with the Solent complex (in terms of Regulation 63 of the Conservation of Habitats and Species Regulations 2017) in respect of the impact pathway of loss of functionally linked land.

6.0 REFERENCES

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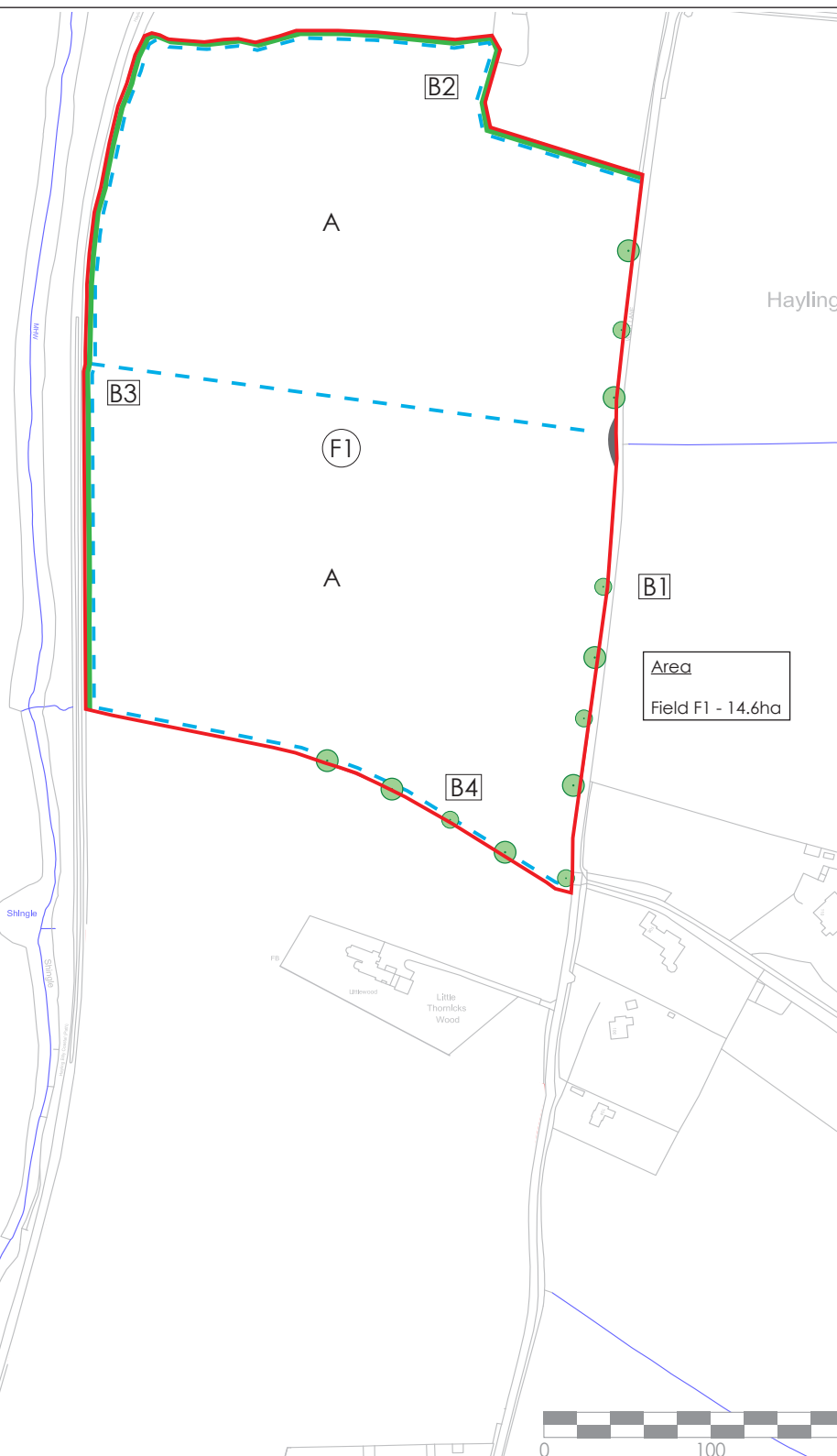
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Appendix A

Refuge Site Habitats Plan



Site boundary



Seasonally wet ditch



Field ref. number



Arable



Tree



Boundary ref. number



Boundary vegetation



Hardstanding



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Project Rook Farm, Hayling Island

Drawing Title Refuge Habitats Plan

Client Gladman Developments

Drawing No. CSA/4956/104

Scale Refer to scale

Date November 22

Rev -

Drawn SV

Checked MR

Appendix B

Photographs



Photograph 1. View west along southern boundary.



Photograph 2. View north-west toward northern boundary.



Photograph 3. View north along western boundary (north field).



Photograph 4. View north along western boundary (south field).

Appendix C

Refuge Site Strategy Plan



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