



## Shadow HRA and Appropriate Assessment

Land East of Westergate

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### Client:

Cala Homes South Home  
Counties

22rd September 2023

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|----------------------|----------------------------------------------------------|
| <b>Site</b>          | Land East of Westergate                                  |
| <b>Report</b>        | Shadow HRA Assessment & Shadow<br>Appropriate Assessment |
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| <b>Client</b>        | Cala Homes                                               |
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## Table of Contents

|                                                                                                 |           |
|-------------------------------------------------------------------------------------------------|-----------|
| <b>1.0 INTRODUCTION .....</b>                                                                   | <b>3</b>  |
| <b>1.1 BACKGROUND .....</b>                                                                     | <b>3</b>  |
| <b>1.2 SITE DESCRIPTION.....</b>                                                                | <b>3</b>  |
| <b>1.3 PROPOSED DEVELOPMENT.....</b>                                                            | <b>3</b>  |
| <b>1.4 LEGISLATION .....</b>                                                                    | <b>4</b>  |
| 1.4.1 Habitats Directive- Natura 2000 .....                                                     | 4         |
| 1.4.2 Case Law.....                                                                             | 4         |
| <b>2.0 HRA PROCESS.....</b>                                                                     | <b>5</b>  |
| <b>2.1 INTRODUCTION .....</b>                                                                   | <b>5</b>  |
| <b>2.2 PRELIMINARY SCREENING .....</b>                                                          | <b>5</b>  |
| <b>2.3 SCREENING .....</b>                                                                      | <b>5</b>  |
| 2.3.1 Assessing Significance .....                                                              | 5         |
| 2.3.2 Screening Assessment .....                                                                | 6         |
| <b>2.4 APPROPRIATE ASSESSMENT .....</b>                                                         | <b>6</b>  |
| <b>2.5 ALTERNATIVE SOLUTIONS/OVERRIDING PUBLIC INTEREST .....</b>                               | <b>6</b>  |
| <b>3.0 EUROPEAN SITES WITHIN ZOI .....</b>                                                      | <b>8</b>  |
| <b>3.1 CONSERVATION STATUS, OBJECTIVE AND VULNERABILITIES.....</b>                              | <b>8</b>  |
| 3.1.1 Conservation Status .....                                                                 | 8         |
| 3.1.2 Conservation Objective .....                                                              | 8         |
| 3.1.2.1 SAC .....                                                                               | 8         |
| 3.1.2.2 SPA .....                                                                               | 8         |
| 3.1.2.3 Ramsar .....                                                                            | 8         |
| <b>3.2 ZONE OF INFLUENCE.....</b>                                                               | <b>8</b>  |
| <b>3.3 EUROPEAN SITES WITHIN ZOI .....</b>                                                      | <b>9</b>  |
| <b>4.0 EXEMPTION, EXCLUSION AND ELIMINATION .....</b>                                           | <b>14</b> |
| <b>4.1 PRELIMINARY SCREENING .....</b>                                                          | <b>14</b> |
| <b>5.0 SCREENING ASSESSMENT.....</b>                                                            | <b>15</b> |
| <b>5.1 SINGLETON AND COCKING TUNNELS SAC.....</b>                                               | <b>15</b> |
| <b>5.7 SCREENING SUMMARY .....</b>                                                              | <b>21</b> |
| <b>6.0 APPROPRIATE ASSESSMENT.....</b>                                                          | <b>22</b> |
| <b>6.1 CEMP (SIGNIFICANT HYDROLOGICAL AND AIR POLLUTION DURING THE CONSTRUCTION PHASE).....</b> | <b>22</b> |
| <b>6.2 TREE PROTECTION FENCING (HABITAT DETERIORATION).....</b>                                 | <b>22</b> |
| <b>6.3 DISTURBANCE OF QUALIFYING SPECIES.....</b>                                               | <b>22</b> |
| <b>6.4 Increased Mortality of Key Species .....</b>                                             | <b>23</b> |
| 6.4.1 Integrated Bricks .....                                                                   | 23        |
| 6.4.2 Bat Boxes on Trees .....                                                                  | 24        |
| <b>7.0 CONCLUSION.....</b>                                                                      | <b>25</b> |
| <b>8.0 REFERENCES.....</b>                                                                      | <b>26</b> |

## 1.0 INTRODUCTION

### 1.1 Background

Ecosupport Ltd was commissioned by Cala Homes to carry out a series of ecological surveys (Ecosupport Ltd, 2023 (a)) of land off Ridgeway Lane, Lymington to inform an application for a development of 400 residential dwellings.

Under Regulation 63 of the Habitats Regulations (as amended) (EU Exit) Regulations (2019), the competent authority must consider whether land use plans of proposed developments are likely to have a significant impact on Natura 2000 sites. This Shadow Habitats Regulations Assessment (HRA) and Appropriate Assessment (AA) will provide information to assist the competent authority in determining the level of impact of the development on Natura 2000 sites that fall within the Zone of Influence (Zoi).

This document should be read in conjunction with the corresponding application forms, documents and plans which accompany the application (Ecosupport, 2023 (a-g)).

### 1.2 Site Description

The site comprises of approximately 18.40ha of grassland, arable, woodland, scrub and hedgerows/treelines located to the east of Westergate, Chichester, PO20 3QR (**Fig 1**) (centered on OS grid reference SU 941 048). The north of the site is bound by a secondary school and residential units, the majority of the east is bound by residential units except for the south-east of site which is largely bound by an adjacent field. Meanwhile the west of site is bound by agricultural land and finally, the south is bound by a railway line. The immediate surrounding wider environ is largely comprised of agricultural fields with the village of Westergate just to the east and twin village Eastergate to the north-east.

### 1.3 Proposed Development

A hybrid application for the development of 400 dwellings and associated access, landscaping and drainage.

## 1.4 Legislation

### 1.4.1 Habitats Directive- Natura 2000

Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsars form a collection of European protected sites known as the Natura 2000 sites. The Habitats Directive (adopted in 1992) is the means for which the European Union meets targets set under the Bern Convention (1992) for the Conservation of Wildlife and Natural Habitats and is transposed into UK law via the Habitats Regulations (as amended) (EU Exit) Regulations (2019). SPAs are European protected sites falling under the Birds Directive (2009) with birds listed in Annex I and internationally important wetlands (Article 4) being the qualifying features. Under Article 6(3) of the Habitats Directive, any plan or project likely to have a significant impact on a European site, either individually or in combination with other plans and projects, shall be subject to an Appropriate Assessment of its implications on the site's conservation objectives.

### 1.4.2 Case Law

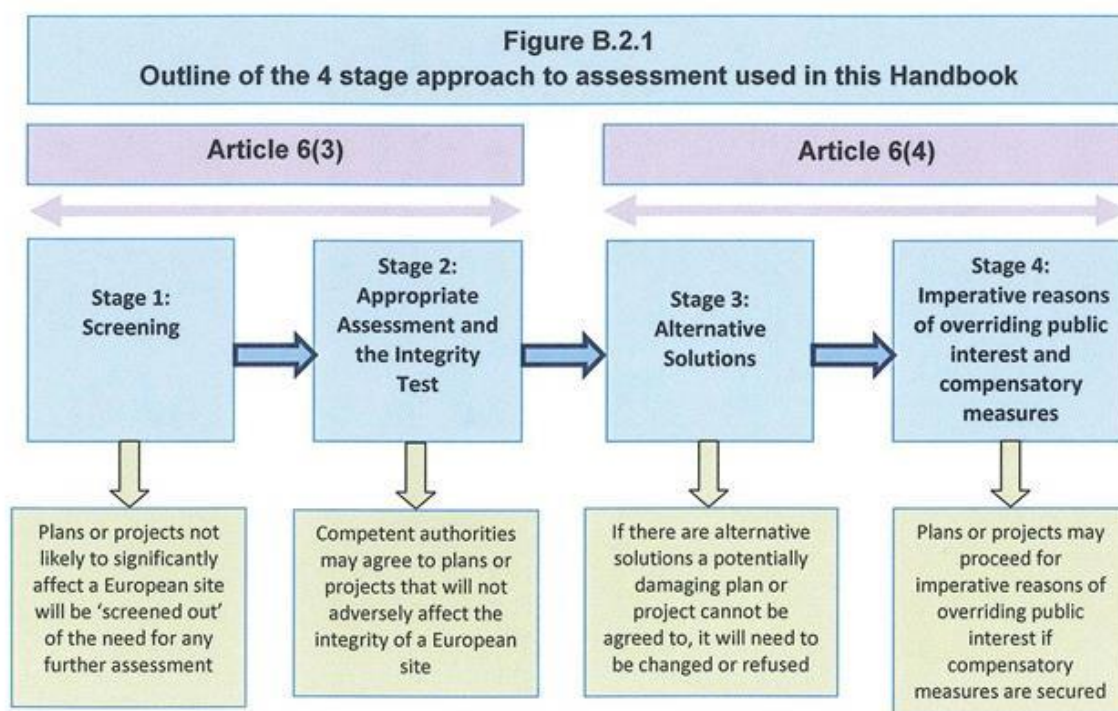
The recent (2017) CJEU judgement 'People Over Wind and Sweetman vs. Coillte Teoranta (C-323/17)' has changed the way in which Competent Authorities must address the HRA process. Any measures that are incorporated into a project specifically to address impacts to international sites can no longer be considered to avoid or reduce (mitigate) a likely significant effect, unless the avoidance effects of a particular feature of the development are essential for the delivery of that project regardless of any effect that feature may have in avoiding or mitigating impacts to the International site.

## 2.0 HRA PROCESS

### 2.1 Introduction

This assessment has a number of phases and is collectively referred to as a Habitats Regulation Assessment (HRA) (Fig 1) (Natural England, 2017). The HRA process must be applied before a plan or project which may affect a European site can be lawfully authorised. In line with Regulation 10 of the Habitats Regulations, European sites are taken to comprise Ramsar sites, Special Protection Areas (SPA) and Special Areas of Conservation (SAC). The HRA Screening Assessment requires the competent authority to determine whether a project is likely to have a *significant* effect upon the integrity of the relevant European site, either alone or in combination with other projects or plans.

**Figure 1.** Outline of the HRA stages taken from the HRA handbook (Tyldesley & Chapman, 2018).



### 2.2 Preliminary Screening

Where plans or projects are directly connected with or necessary to managements of a European site, are the continuation of on-going activities not subject to any form of authorisation or it is obvious that it could not have any conceivable effect on any European Site then no further screening for likely significant effects under the Habitats Regulations is required.

### 2.3 Screening

#### 2.3.1 Assessing Significance

Terminology:

**Likelihood:** A likely effect is one that cannot be ruled out on the basis of objective information. Ordinarily, 'likely' might be considered to mean that an effect is probable or might well happen.

However, the Waddenzee case (ECJC-127/02) in the European Court ruled that a project should be the subject of an Appropriate Assessment if:

*‘...it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site either individually or in combination with other plans and projects’.*

‘Objective’, in the context of HRA, means information based upon clear, verifiable fact rather than subjective opinion. Conclusions of either nature must be based upon credible evidence rather than supposition or speculation.

**Significance:** Where a project, either alone or in combination with other plans or projects, could undermine the site’s conservation objectives, the effects on the site must be considered to be significant. The relevant consideration is the potential effect on the ecological functioning of the site, rather than consideration solely on the proportion or area of the habitats or species affected on a site. These effects may be direct or indirect, and could relate to works within the European site itself, or beyond its boundaries but which might cause impacts to qualifying mobile features within the site when they are outside it.

**Effect:** It is therefore apparent that the first task is to identify the effects that could follow from the implementation of the project, and how and to what level they might affect any given International site.

### 2.3.2 Screening Assessment

The first stage of the HRA process is a Screening Assessment (SA), where all proposals are screened for potential likely significant effects upon European sites, both in isolation and in combination with other plans and proposals in the locality. If the SA concludes that such impacts cannot be excluded, the HRA progresses to the Appropriate Assessment (AA) stage, to classify such impacts and determine whether effects upon the integrity of the European site can be ruled out. If the SA concludes that no significant impacts are likely to result from the scheme, however, the scheme is screened out and no further HRA consideration is required.

## 2.4 Appropriate Assessment

If an AA is required, following its completion, permission should only be granted if the competent authority is satisfied that, based upon the best available scientific information and in light of any suitable mitigation measures, the proposed scheme will result in no significant adverse effects upon the integrity of the European site through appropriate measures being established, either alone or in combination with other plans or projects in the area. The only exception to this is when further tests as described in Article 6(4) can be met, as detailed below. This process requires consultation with, and the agreement of, Natural England to ensure the requirements of the Habitats Regulations are satisfied prior to authorisation of the proposals.

## 2.5 Alternative Solutions/Overriding Public Interest

A precautionary approach must be adopted in HRA, and where a loss of site integrity cannot be ruled out (i.e. a ‘significant impact’ is likely to occur), the proposals will either have to be change or may only be authorised under very exceptional circumstances (such as overriding public interest and with

no viable alternative), as detailed in full under Article 6(4)) and following consultation with the European Commission.

### 3.0 European Sites within Zol

#### 3.1 Conservation Status, Objective and Vulnerabilities

##### 3.1.1 Conservation Status

The conservation status of European sites is not routinely reported on by Natural England, however, condition monitoring of component Sites of Scientific Interest (SSSIs) is undertaken at regular intervals. Whilst the boundaries of component SSSI units do not always match the boundaries of European Sites, SSSI condition status gives an indication of overall ecological status.

##### 3.1.2 Conservation Objective

In line with conservation objectives for European sites published by Natural England, the following high-level objectives apply to all of the SACs and SPAs:

###### 3.1.2.1 SAC

To ensure that the integrity of the site is maintained/restored as is appropriate and ensure the site contributes towards meeting a favourable conservation status of its qualifying features by maintaining:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species
- The distribution of qualifying species within the site.

###### 3.1.2.2 SPA

To maintain the integrity of SPAs and ensure they are achieving the aims of the Birds Directive, the following must be maintained:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

###### 3.1.2.3 Ramsar

With regards to Ramsar sites, Natural England has indicated that as the provisions of the Habitats Regulations relating to HRA extend to Ramsar sites, it is considered that the Conservation Objectives and associated advice packages, for SACs/ SPAs with overlapping boundaries and similar features for designation for Ramsar sites, should be considered when assessing potential effects.

### 3.2 Zone of Influence

Quantifying this area is complex and is rarely limited to the development site or some set distance from the project area. The zone of influence is often dependent on the impacting factor (both direct and indirect) and the affected resource. Certain impacts associated with a development can be

calculated using various factors; for example, for water pollution you can use the volume and flow of that water body, the nature of the pollutant and the chemical characteristics of the water body and computer models can be used to calculate air pollution. However, you cannot accurately predict factors associated with inhabitants of a new development. Although the area of influence will, in general, be localized and restricted to the project footprint and immediate surroundings, land use is more complex. For example, how people will utilize areas for recreation and how far they will travel is difficult to accurately predict. Ecological resources are impacted by the zone of influence of the above factors combined along with others.

As distance strongly influences the scale and likelihood of most effects it is considered that the use of a precautionary radii is appropriate as a starting point. In accordance with the HRA Screening undertaken in relation to plans and projects within this region, the Zol of the proposed development is considered to comprise European sites within a 10km radii of the site; and European sites in excess of 10km where specific environmental sensitivities are present in relation to the scale and type of development proposed.

### **3.3 European Sites within Zol**

The following sites are within the Zol of 10km from the site are shown in **Table 1** below:

**Table 1.** List of European Sites within Zol including distances, qualifying features and known vulnerabilities.

| Site           | Designation | Distance/Orientation | Qualifying Features                                                                                                                                                                                                                                                                                                                                                 | Conservation Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Component SSSI Condition                                                                                                                             | Known Vulnerabilities                                                |
|----------------|-------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Pagham Harbour | SPA         | 8.35km/SW            | Breeding and non-breeding populations of waterbirds, including Common Tern ( <i>Sterna hirundo</i> ), Little Tern ( <i>Sterna albifrons</i> ), Dark-bellied Brent Goose ( <i>Branta bernicla bernicla</i> ), and Ruff ( <i>Philomachus pugnax</i> ). The site also regularly supports over 20,000 waterfowl (found via a 5-year peak mean noted between 1992-1997). | <p>Subject to natural change, maintain in favourable condition5 the habitats for the internationally important populations of the regularly occurring Annex 1 bird species, under the Birds Directive, in particular:</p> <ul style="list-style-type: none"> <li>• Mudflat and sandflat communities</li> <li>• Shallow water over intertidal areas (with permanent water channels)</li> <li>• Saltmarsh</li> <li>• Shingle for roosting</li> </ul> <p>Subject to natural change, maintain in favourable condition5 the habitats for the internationally important population of the regularly occurring migratory species, under the Birds Directive, in particular:</p> <ul style="list-style-type: none"> <li>• Mudflat and sandflat communities</li> <li>• Saltmarsh</li> <li>• Shallow water over intertidal areas</li> </ul> | The SSSI components of Pagham Harbour SSSI support a mixture of favourable, unfavourable recovering, unfavourable declining units, and not recorded. | Scrub encroachment, non-native species, recreational/residential-use |
|                | Ramsar      | 8.35km /SW           |                                                                                                                                                                                                                                                                                                                                                                     | An estuarine harbour with shingle beaches, intertidal mudflats and saltmarsh, giving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                      |                                                                      |

|                               |     |            |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                        |                                                                                                                                         |                                                                                                                            |
|-------------------------------|-----|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|                               |     |            |                                                                                                                                                                                                                                                                                                                                  | way to brackish marsh supporting reedbeds and damp pasture. The site includes a nationally important vegetation community and small amounts of ancient woodland. Nationally and internationally important numbers of wintering or breeding waterbirds or waders use the site.                          |                                                                                                                                         |                                                                                                                            |
| Duncton to Bignor Escarpment  | SAC | 7.90km/NE  | Supports the Annex 1 habitat <i>Asperulo-Fagetum</i> Beech forests. These forests also support rare plants including Green Helleborine ( <i>Helleborus viridis</i> ), White Helleborine ( <i>Cephalanthera damasonium</i> ), and Yellow Bird's Nest ( <i>Monotropa hypopitys</i> ). The woods also support a rich mollusc fauna. | <ul style="list-style-type: none"> <li>• The extent and distribution of qualifying natural habitats</li> <li>• The structure and function (including typical species) of qualifying natural habitats, and</li> <li>• The supporting processes on which the qualifying natural habitats rely</li> </ul> | SSSI units comprise units of 'unfavourable recovering' and 'unfavourable declining' units within the Duncton to Bignor Escarpment SSSI. | Recreational pressure                                                                                                      |
| Singleton and Cocking Tunnels | SAC | 11.14km/NW | Annex II species present as a qualifying feature, but not a primary reason for selection of this SAC include hibernating Barbastelle ( <i>Barbastella barbastellus</i> ) and Beckstein's Bat ( <i>Myotis bechsteini</i> ).                                                                                                       | The conservation objectives are to ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:                                       | SSSI units comprise units of 'favourable' units within the Singleton and Cocking Tunnels SSSI.                                          | Recreational pressure; modification of cultivation practices; changes in biotic conditions; other ecosystem modifications. |

|                   |     |          |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                         |  |
|-------------------|-----|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                   |     |          |                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• the extent and distribution of qualifying natural habitats and habitats of qualifying species;</li> <li>• the structure and function (including typical species) of qualifying natural habitats;</li> <li>• the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;</li> <li>• the populations of qualifying species; and</li> <li>• the distribution of qualifying species within the site</li> </ul> |                                                                                                                                                                                                                                         |  |
| Solent and Dorset | SPA | 5.05km/S | The Solent and Dorset Coast pSPA was fully designated as a SPA in 2020. This SPA in particular adds additional protection for international important populations of specifically for Common Tern ( <i>Sterna hirundo</i> ), Sandwich Tern ( <i>Sterna Sandvicensis</i> ), and Little Tern ( <i>Sternula albifrons</i> ) in addition to the protection afforded by | <ul style="list-style-type: none"> <li>• The extent and distribution of the habitats of the qualifying features</li> <li>• The structure and function of the habitats of the qualifying features</li> <li>• The supporting processes on which the habitats of the qualifying features rely</li> <li>• The population of each of the qualifying features, and,</li> <li>• The distribution of the qualifying features within the site. The extent and</li> </ul>                                    | The SSSI components of Bognor Reef and Climping Beach, and Felpham SSSIs support a mixture of favourable, unfavourable recovering, unfavourable declining units, and not recorded.<br><br>Please also see above for Pagham Harbour SPA. |  |

|  |  |  |                                      |                                                         |  |  |
|--|--|--|--------------------------------------|---------------------------------------------------------|--|--|
|  |  |  | the existing Solent and Dorset SPAs. | distribution of the habitats of the qualifying features |  |  |
|--|--|--|--------------------------------------|---------------------------------------------------------|--|--|

## **4.0 EXEMPTION, EXCLUSION AND ELIMINATION**

### **4.1 Preliminary Screening**

As a result of the preliminary screening process, Pagham Harbour SPA/Ramsar, Duncton to Bignor Escarpment SAC, and Solent and Dorset SPA are not considered to require further screening. At distances between 5.06km and 8.35km from the site, it is not considered there are any conceivable impact pathways from the proposed development site to the European protected sites (particularly when considering the isolated nature of the proposals). The exception is Singleton and Cocking Tunnels SAC which, due to the mobile nature of bats between roosts throughout the year, has Zone of Influence of 12km.

## 5.0 SCREENING ASSESSMENT

### 5.1 Singleton and Cocking Tunnels SAC

The screening assessment for the likely significant effects of the proposed development at the land off Ridgeway Lane on the Solent and Southampton Water SPA is shown in **Tables 2** below.

**Table 2.** Identification of impact pathways from the proposed development to Singleton and Cocking Tunnels SAC.

| Describe any likely changes to the site or its qualifying features arising as a result of the following impact pathways: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Land take by development within European site                                                                            | None: Site not within or in immediate proximity to the SAC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fragmentation of European site habitats                                                                                  | None: Site not within or immediately adjacent to SAC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Damage or deterioration of supporting habitats, outside European site                                                    | Construction phase: The boundary habitats on site provide foraging and commuting resources for common, rarer and rarest species of bat, and bats associated with Singleton and Cocking Tunnels SAC. The development will result in the loss of some hedgerows on-site, and, if unmitigated, potential impacts through root compaction and damage to retained trees/tree lines on commuting routes. Additionally, the development will result in the permanent loss of bat foraging habitat in the form of the grassland and a small area of wet woodland (in which a Bechstein's Bat was trapped during Harp trapping surveys). Therefore, it is considered the development will result in a likely significant adverse effect to Annex 1 species within the SAC.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Increased mortality of key species                                                                                       | Construction phase: Only 1 tree is proposed for removal supported moderate potential for roosting bats or higher and has been subject to Phase II emergence surveys (using thermal cameras). Soprano Pipistrelle and Common Pipistrelle day roosts were identified within this tree, with no other bat species noted emerging. Despite this, individual Barbastelles were identified commuting across the site during static surveys completed between April-August 2023, and one lactating female was found during the trapping surveys. One Bechstein's Bat was identified shortly after sunset within the wet woodland. Day roosting preferences for Bechstein's bat include woodpecker holes and crevices within Crack Willow ( <i>Salix fragilis</i> ) which is present within the wet woodland on-site. This bat was originally tagged in Binsted (over 5km away) indicating that this individual was likely roosting on-site or very close by. Despite this, trees with at least moderate potential for roosting bats are being retained in the woodland as part of the proposals. One tree with low potential for roosting bats is proposed for removal within the wet woodland. The loss of |

hedgerows (1.05km) and wet woodland will result in a likely significant adverse effect on Annex species associated with the SAC.

**Figure 2.** Approximate location of low potential Crack Willow to be removed.



|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disturbance of Qualifying Features | <p>As mentioned above, both Barbastelle and Bechstein's bat were recorded as commuting across site between April-August 2023. Both bat species are known to generally avoid street lights compared to other bat species such as <i>Pipistrellus</i> spp., <i>Nyctalus</i> spp. and Serotine (<i>Eptesicus serotinus</i>). As such, these bat species which are light sensitive are at "<i>a competitive disadvantage and are less able to forage successfully and efficiently. This can have a significant impact upon fitness and breeding success.</i>" (ILP and BCT, 2018). As the proposals involve increased artificial lighting in the form of street lights, light spill from new dwellings and security lighting, some loss of suitable bat foraging and commuting habitat will be disturbed during the operational phase of the development., in the absence of mitigation this would likely have <b>a moderate adverse significant effect</b> upon the bat species associated with the SAC.</p> |
| Atmospheric pollution/air quality  | <p>Construction activities have the potential to impact on air quality. Construction activities are associated with the generation of nuisance dust (larger particles) and PM10 emissions. The larger particles tend to fall out quickly and, therefore, the impacts are generally most likely to be felt within 200m of the development (DEFRA, 2016). Sensitive ecological receptors within this ZOI include retained wet woodland and hedgerows. Larger dust particles can coat the leaves of vegetation impacting the plant's ability to photosynthesise by blocking the stomata and/or blocking out light. Indirect impacts include the deposition of dust within soils, impacting the soil</p>                                                                                                                                                                                                                                                                                                      |

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     | <p>pH and invertebrate community. The Air Quality Impact Assessment states the following in the absence of mitigation:</p> <p><i>'For the construction phase, a qualitative assessment of the potential impacts on local air quality from construction activities has been carried out for this phase of the Scheme using the IAQM Construction Dust guidance assessment methodology. This identified that overall there is a High Risk of dust soiling impacts and a Low Risk to human health due to increases in particulate matter concentrations as a result of construction activities.'</i></p> <p>Therefore, there will be <b>a likely significant effect</b> on habitats supporting the Singleton and Cocking Tunnels SAC through dust deposition.</p> <p>Increases in vehicle movements have the potential to increase NO<sub>x</sub> (nitrogen oxide) emissions, which can affect botanical species composition and structure as a result of acidification and eutrophication. In addition, increased ammonia (NH<sub>3</sub>) concentrations within the atmosphere can lead to increased rates of nitrogen deposition. It is conceivable that changes in habitat composition as a result of eutrophication could potentially have a knock-on effect to prey availability for SPA species.</p> <p>Increases in NO<sub>x</sub> emissions (and therefore nitrogen deposition) can impact vegetation within 200m of a road network, with pollutant concentration dropping off rapidly with distance from the road, and any impact considered to be negligible at distances over 200m (Highway Agency, 2007). Natural England (June 2018) and Highways England are in agreement that effects on protected sites fall within this radii need to be considered. As supporting habits for Annex 1 species associated with Singleton and Cocking Tunnels SAC fall within this radii, these have been scoped in to this stage of the assessment.</p> |
| Changes to soil chemistry                                           | Negligible impacts from acidification and eutrophication from increased NO <sub>x</sub> and NH <sub>3</sub> emissions during the construction phase as mentioned above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hydrological regime change AND/OR Pollution of surface/ground water | <p>The site supports one stream and dry ditches (Ecosupport Ltd, 2023).</p> <p>Due to the distance of the site from the designated site, it is unlikely these water systems are hydrologically linked. Despite this, the wet woodland is connected to the wider site through the dry ditches which may hold water during high rainfall periods.</p> <p>During the construction phase, aquatic pollution in the form of surface run-off may be created through sedimentation and dust from construction activities, toxic metals and petroleum wastes from mechanical equipment. Therefore, in the absence of mitigation there is the potential for a minor increase in aquatic pollution, which could <b>significantly adversely impact</b> on the wet woodland retained on-site.</p> <p>A SUDS system will be in place once the development has become operational and will be used to filter any surface water runoff from this development. Therefore, there will be a likely <b>neutral impact</b> from surface water run-off.</p> <p>The site supports two dry ditches which have shown evidence of supporting water during wet periods (A SUDS system will be in place once the development has become operational and will</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|  |                                                                                                                                                       |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | be used to filter any surface water runoff from this development. Therefore, there will be a likely <b>neutral impact</b> from surface water run-off. |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|

**Table 3.** Potentially significant facets of the proposed development for the Solent and Southampton Water SPA.

| Outcome of Screening (proposed development alone)                                                                                                                  |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Could there be any effect on the European site? (proposed development alone)                                                                                       | YES |
| If no, proposed development is screened out                                                                                                                        |     |
| Will there be likely significant effects on the European site, or does uncertainty remain over the potential for significant effects? (proposed development alone) | YES |
| If yes, proposed development is screened in                                                                                                                        |     |
| If no, assess in combination with other plans or projects below                                                                                                    |     |

**Table 4.** Outcome of screening assessment in combination with other plans or projects for the Singleton and Cocking Tunnels SAC.

| <b>Outline any other plans or projects with likely significant effects when considered in combination with the proposed development:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Arun Local Plan 2011-2031</li> <li>• Other adopted / draft Local Plans for surrounding Local Authorities which could have in- combination effects including Chichester District Council</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Describe any potential impact pathways and characterise any likely significant effects on the European site:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>Whilst likely significant effects, or uncertainty over likely significant effects has already been identified for the proposed development alone, it should be noted that the following pathways may also result in likely significant effects in combination with other plans or projects:</p> <p><u>Damage or deterioration of supporting habitats, outside European site</u></p> <p>Development associated with the wider WEB strategic allocation includes 6 total applications for extensive development including the land north of Eastergate and north-west of Barnham single carriageway (WSCC/052/20), land north of Barnham Road and east of Fontwell Avenue hybrid application for 551 dwellings (BN/195/22/PL), Woodgate Centre (AL/107/21/PL) for 180 dwellings which all also fall within the 12km ZoI for Singleton and Cocking Tunnels SAC.</p> <p>Application WSCC/052/20 for the single carriageway has been designed with extensive new hedgerow planting and creation of wildlife corridors (<b>Fig 3</b>).</p> |



habitat creation measures (native hedgerows/trees/scrub/wildflower meadow). Application WSCC/052/20 includes a sensitive lighting strategy for bats, however, to-date mitigation for Barbastelles and Beckstein's Bat are to be agreed for application BN/195/22/PL. Therefore, an **adverse effect is likely** in combination.

#### Atmospheric Pollution/Air Quality

All other developments are proposed at a significant distance (>200m) from the site and Singleton and Cocking Tunnels SAC that there will be **negligible cumulative effects** from atmospheric pollution/reduced air quality during the construction phase.

#### Changes to Soil Chemistry

Negligible cumulative impacts from acidification and eutrophication from increased NO<sub>x</sub> and NH<sub>3</sub> emissions during the construction phase as mentioned above.

#### Aquatic Pollution

The proposed developments are at such a distance from both the designated site and sensitive habitats on-site that cumulative aquatic effects will be **negligible**.

Are significant effects likely when considered in combination with other plans or projects?  
If yes, proposed development is screened in

YES

## 5.7 Screening Summary

A summary of the results of both the preliminary screening and screening stages are displayed in **Table 5** below.

**Table 5.** Preliminary screening and screening results.

| Site                              | Designation | Significant effects likely from the proposed development alone?                                                                                           | Significant effects likely when considered in combination with other plans or projects? |
|-----------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Singleton and Cocking Tunnels SAC | SAC         | Yes (loss/damage/deterioration, disturbance of qualifying species, increased mortality of qualifying species, changes to soil chemistry, water pollution) | Yes (disturbance of qualifying species).                                                |

## 6.0 APPROPRIATE ASSESSMENT

### 6.1 CEMP (Significant Hydrological and Air Pollution During the Construction Phase)

To avoid potential disturbance impacts through increased air and aquatic pollution, a Construction Environmental Management Plan (CEMP) will be produced to accompany the application. This will detail methods of construction that will be employed to avoid/minimise impacts to the features for which this protected area qualifies (such as mitigating dust arising from construction works).

With these mitigation measures in place, it is anticipated noise disturbance during the construction phase will have a likely *negligible* impact upon the SAC.

### 6.2 Tree Protection Fencing (Habitat Deterioration)

In all cases, retained trees must be protected from direct impact and from severance or asphyxiation of the roots. An appropriate stand-off zone will be established on site to protect the trees. Fences must be installed at the distance of the branch spread away from the tree trunk (British Standard 5837:2012 trees in relation to construction) at a distance half the height of the tree and be of chestnut paling or of another similarly robust style of fencing. No vehicles should enter the protective ring fencing and no materials should be stored within their circumference. All protective fencing must be in place before any construction machinery arrives on site, and before any site stripping commences.

### 6.3 Disturbance of Qualifying Species

Please note, the application does not include the details of house materials or layout, therefore additional ambient artificial lighting from the introduction of the dwellings will be considered at the reserved matters stage.

All artificial lighting will be kept below a maximum of 0.5lux on retained boundary habitats (including the stream, retained woodland, retained scattered trees and retained scrub). These areas will be seeded with wildflowers to improve the quality of boundary grassland habitats for bats and will also include the installation of log piles and hibernacula to increase the habitat resource for invertebrates (an important food source for bats). This will provide improved foraging habitat on-site post-development. In addition, the habitats will be protected from light spill (please refer to the accompanying BNG report for full details).

Ecotones will be utilized adjacent to key commuting and foraging habitats to provide a level of protection for bats from artificial light (Fig 18).

In addition to the lux levels, the wavelength of the street lighting will be kept to below 2700 Kelvin and peak wavelengths higher than 550nm, as bats have been shown to be less impacted by warm, white light sources without LED components.

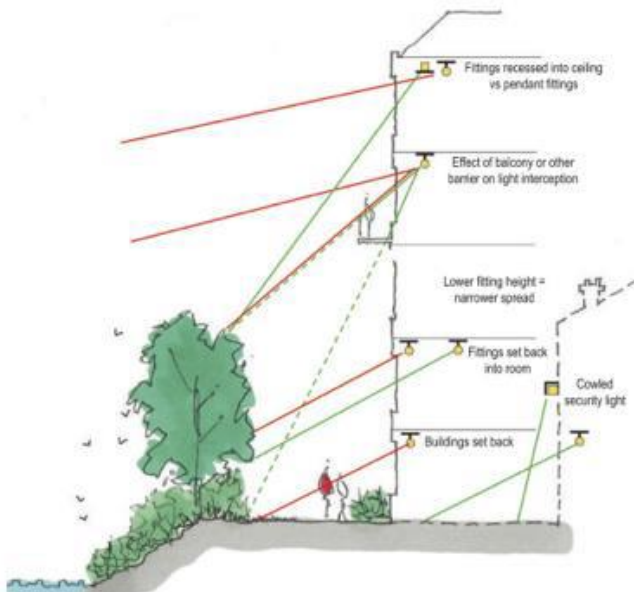
For site-wide street lighting, directional hoods will be utilized to prevent light spill above the 90o horizontal plane and to direct the light source towards the urbanized areas and away from linear boundary habitats.

Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut

off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely' Please see **Figure 4** below for a schematic of lighting recommendations that will be followed.

It has been confirmed with the lighting consultant that the LumiStreet luminaire will be used as these are 'equipped with dedicated light recipes that help with: 1) maintaining an optimal ecosystems for bats or 2) preserving a dark night sky and reduce light pollution'.

**Figure 4.** Internal lighting mitigation options (ILP 2023).



#### **6.4 Increased Mortality of Key Species**

All trees considered to be of Low roost potential with stem diameters in excess of 50mm should be soft-felled, with any Ivy carefully pulled back and checked for bats prior to felling. The existing cavities/crevices/voids that may support roosting bats, as well as any additional ones which are uncovered during works, will require further assessment through endoscopy of potential features and felling under the supervision of a suitability qualified ecologist.

During the operational phase, any tree removal or remedial works required should be determined by a suitably qualified arboriculturist and information submitted to the LPA prior to works commencing. A detailed ground level assessment should be undertaken by an ecologist to determine the potential for roosting bats, prior to removal.

***NB If any bats are encountered, work on the trees in question must cease and an ecologist must be contacted immediately. Additionally, any other trees identified as requiring removal or remedial works must be subject to a detailed ground-level assessment prior to works to assess suitability for roosting bats.***

##### **6.4.1 Integrated Bricks**

It is recommended that at least 50% of the proposed dwelling should include one bat brick or

suitable alternative. The bat bricks used should be the ibstock bat brick B as they are available in a variety of different brick colours and requires no maintenance (**Fig 5**). These should also be positioned as close to the eaves as possible, away from windows and in a position that will receive some direct sunlight.

**Figure 5.** The ibstock bat brick 'B' that will be incorporated into the newly built building.



#### 6.4.2 Bat Boxes on Trees

In addition, bat boxes should be erected within trees in the woodland and retained mature trees (exact number to be determined at the RM stage):

Schwegler 2F bat boxes (or similar) – The front panel has a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices.

Schwegler 1FF bat boxes (or similar) – These are spacious enough for bats to use as a s roost or nursery width making it ideal for bat species which inhabit crevices such as Pipistrelle Bats but also larger bats such as Noctule (*Nyctalus noctula*).

Schwegler 1FD bat box (or similar)– The domed roof results in an increased interior height whilst the two grooved internal wooden front panels provide a crevice. Both the cooler woodcrete surface and the warmer wooden panel means bats have a choice of different temperatures in different parts of the box.

Bat boxes to be sited on trees will be done so using the galvanised steel hanger and aluminium nail provided. They should be positioned at a height of between three to six metres from ground level. Bat boxes should ideally be sited in open sunny positions. The arrangement of the bat boxes has them facing different directions to provide a variety of micro-habitats. To increase the chances of bats roosting in the new features, the bat boxes will be placed adjacent to vegetation features as bats will be more likely to discover the artificial roosts if it is placed close to an existing flight path.

## 7.0 CONCLUSION

Based on the information provided, it is anticipated that the competent authority, under Regulation 63 of the Conservation of Habitats and Species Regulations 2019 (as amended), will conclude that the proposed development has the potential to result in negligible likely significant effects alone and in combination on the Singleton and Cocking Tunnels SAC, with the following impact pathways identified:

- loss/damage/deterioration of supporting habitats
- Disturbance of qualifying species
- Increased mortality of qualifying species
- Changes to soil chemistry
- Water pollution

The competent authority must therefore undertake an AA of the implications of the proposed development on the qualifying features of the Singleton and Cocking Tunnels SAC.

With consideration of the proposed mitigation measures for the identified impact pathways, it is anticipated that the competent authority will ascertain that the proposed development will not have any significant adverse effect on the integrity and ecological functioning of these European sites.

Through the submission of this report, is it considered that the applicants (Cala Homes) have discharged their duty under Regulation 63(2) to, *“provide such information as the competent authority may reasonably require for the purposes of the assessment”*.

## 8.0 References

AEA Technology (2010). *Road transport emissions impacts on Nature Conservation Sites. Report to the Partnership for Urban South Hampshire.*

Ecosupport (2023) (a) *Ecological Impact Assessment for Land East of Westergate*

*Ecosupport Ltd (2023) (b) Biodiversity Net Gain Assessment*

*Ecosupport Ltd (c) UK Habs Map*

*Ecosupport Ltd (d-e) BBS Maps (North and South)*

*Ecosupport Ltd (f) Detailed bat and bird survey results*

HMSO (2010) *The Conservation of Habitats and Species EU Exit Regulations 2019*. Statutory Instrument 2019 No. 490. HMSO, London.

Natural England (1998) European Conservation Objectives for Singleton and Cocking Tunnels SAC

Tyldesley, D. and Chapman, C. (2018). *The Habitats Regulations Assessment Handbook*. DTA Publications Ltd., Berkshire

