

Biodiversity Net Gain Assessment

February 2024

**Parcel R, Kingsmere,
Bicester**

Prepared by
CSA Environmental

On behalf of
Preferred Homes Bicester Ltd
& Countryside (Bicester) Ltd

Report No: CSA/6236/02

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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1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf Preferred Homes Bicester Ltd & Countryside (Bicester) Ltd. It provides a Biodiversity Net Gain Assessment (BNGA), which will outline the assessment methods and results of a biodiversity net gain calculation carried out for Parcel R, Kingsmere, Bicester (hereafter referred to as 'the Site').
- 1.2 This is a hybrid application comprising (i) in FULL; the construction of an 82 no. apartment affordable extra care home (class C2) with associated bistro, open space, landscaping, car/cycle parking, service infrastructure (drainage, highway, lighting), engineering operations, creation of new vehicular access and re-instatement of existing access to footpath, and (ii) in OUTLINE; the construction of a maximum of 14 market residential dwellings (class C3), on land known as Parcel R, Kingsmere, Bicester.
- 1.3 The Site occupies an area of c. 0.935ha and is located around central grid reference SP 564 224, to the west of Bicester, Oxfordshire. It consists of land previously cleared for development, with temporary structures located centrally and hardstanding, including a bund of soil, with discreet areas of colonising vegetation and other neutral grassland as a result of lack of management (see Habitats Plan in Appendix A). Before the Site was cleared for development in late 2018, it comprised entirely of agricultural land.

The Site is part of the wider Kingsmere, Bicester development, which was granted outline planning permission in May 2017 (application reference 13/00847/OUT). Since then, all other parcels of the development have obtained detailed planning permission and are in varying stages of construction. The entire area of outline planning permission was cleared to make way for development in late 2018, with the Site being used as a site compound ever since.
- 1.4 In line with advice from the Local Planning Authority, the calculation of biodiversity net gain units has been undertaken using the Natural England Biodiversity Metric 4.0; and follows guidance set out within 'Biodiversity net gain. Good practice principles for development' (Baker *et al.*, 2019).
- 1.5 This BNG Assessment aims to:
 - Classify the type, distinctiveness, condition, connectivity and strategic significance of habitats present prior to and post-development.

- Ensure that baseline habitat conditions are classified in a robust and consistent manner, and that classification is based on the best data available at the time of assessment.
- Clearly identify data collection methods and any limitations.
- Calculate baseline pre- and post-development habitat and hedgerows units for the Site based on development proposals for Parcel R, Kingsmere, Biceser.
- Propose a Biodiversity Net Gain design with the aim of maximising biodiversity net gain through habitat creation and enhancement.
- Aim to achieve BNG on-site wherever possible; with off-site measures being considered as an alternative option where required.

1.6 This report and the accompanying Biodiversity Metric have been completed by ecologist Lucy Moorhouse (FISC Level 4), overseen by senior ecologist Alex Perry ACIEEM (FISC Level 4). Both the above ecologists are considered to be experienced and competent in the production of such documents, being able to confidently identify the positive and negative indicator species for the habitats likely to occur on-site.

2.0 PLANNING POLICY AND LEGISLATION

2.1 The National Planning Policy Framework (2023) (NPPF) sets out existing government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, paragraph 180, states that the planning system and planning policies should minimise impacts on and provide net gains for biodiversity. Paragraph 186 sets out the principles that local planning authorities should apply when determining planning applications. These include:

- If significant harm to biodiversity resulting from a development cannot be avoided (through locating to an alternative site with less harmful impacts).
- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused.
- Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

2.2 Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Practice Guidance (PPG). That relating to the protection and enhancement of the Natural Environment was most recently updated in August 2021. The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular the PPG promotes the delivery of measurable biodiversity net gain through the creation and enhancement of habitats alongside development.

2.3 The Government confirmed its intention to mandate Biodiversity Net Gain at a minimum of 10%. This has now been enacted into English law further to the passing of the Environment Act 2021. The BNG provisions in the Act are due to come into force on 12 February 2024, although many Local Planning Authorities have started to include biodiversity net gain requirements into Local Plan policy.

2.4 The Cherwell Local Plan (July 2015) refers to a measurable net gain in biodiversity, although it falls short of stating what percentage net gain would be required.

3.0 BIODIVERSITY NET GAIN: GOOD PRACTICE PRINCIPLES

Biodiversity Net Gain

- 3.1 Biodiversity net gain has been defined as 'development that leaves biodiversity in a better state than before, and an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation' (Baker, 2016).

Good Practice Principles

- 3.2 Good practice principles for biodiversity net gain are set out within Table 1.1 of 'Biodiversity net gain. Good practice principles for development' (CIEEM et al., 2019). Key principles include:

- Apply the 'Mitigation Hierarchy' (in line with CIEEM Guidelines for Ecological Impact Assessment (EclA) (CIEEM, 2018) and be 'additional' by achieving outcomes that exceed existing obligations.
- Avoid losing biodiversity which cannot be off-set elsewhere (e.g. irreplaceable habitats).
- Address risk (e.g. difficulty of achieving habitat creation / enhancement for net gain).
- Make a 'measurable' net gain contribution (e.g. calculated using an appropriate metric) and ensure that calculations are consistent and transparent (i.e. limitations and assumptions are clearly identified).
- Ensure that net gain design achieves the best outcome for biodiversity (this may require both quantitative and qualitative assessment) and create a net gain legacy for long-term benefits.

4.0 METHODS

Desk Study

- 4.1 In order to inform an assessment of the habitat types, condition and strategic significance a desk study was undertaken. This comprised a review of the following:
- Multi-Agency Geographic Information for the Countryside (MAGIC) online database (accessed February 2024) – to identify statutory nature conservation designations.
 - Data search response from Thames Valley Environmental Records Centre (TVERC) – to identify non-statutory nature conservation designations and records of protected/notable habitats and species.
- 4.2 Relevant desk study data is presented in the Preliminary Ecological Appraisal (PEA) (CSA/6236/01D).

UK Habitat Classification ('UKHab') survey

- 4.3 An initial UKHab survey was carried out in fine and dry weather conditions on 24 May 2023 by Lucy Moorhouse FISC¹ level 4, encompassing the Site and immediately adjacent habitats that could be viewed. Habitats recorded are mapped on Habitats Plan (CSA/6236/101) provided in Appendix A. Botanical species lists for each habitat identified are provided within the PEA.

Condition Assessment

- 4.4 Detailed Habitat condition assessments of the current on-site habitats were undertaken alongside the UKHab survey of the on-site habitats on the 24 May 2023 within the optimal botanical period for the habitats present. Nevertheless, as the baseline of the Site from January 2020 was comprised of bare ground, the condition was assigned from past aerial imagery.
- 4.5 Habitat condition was assigned following guidance from the 'Technical Supplement' document (Natural England, 2023) which accompanies the Biodiversity Metric 4.0. Assessment criteria were followed for each broad habitat type, to determine the condition of each habitat.

Strategic Significance

- 4.6 The strategic significance criterion within the Biodiversity Metric 4.0 was calculated by determining if habitat areas within the Site occur within any strategic locations for biodiversity, form part of a designated site for

¹ Field Identification Skills Certificate (FISC), Botanical Society of Britain and Ireland

nature conservation or are identified within local plans such as Ecological Networks or steppingstone features.

Measurement of Habitat Area

- 4.7 Baseline and proposed habitat areas were measured as distinct habitat parcels. Baseline habitat parcels for on-site land were measured using habitat mapping (CSA/6326/101), and aerial imagery overlain in QGIS. Post-development habitats were calculated by measuring the Proposed Site Layout Plan by Corstorphine & Wright (21413-CWA-BC-XX-DR-A-2011 Rev P24) and the Soft Landscape Plan by Urban Green (UG_2166_LAN_SL_DRW_02) in QGIS, allowing areas of retained, created and enhanced habitat to be measured.

Trading Summary

- 4.8 'Trading' is a concept within application of Biodiversity Net Gain, whereby any area of habitats lost should be replaced with those of an equivalent or higher significance. The Trading Summary within the Metric calculates whether there has been an overall increase or decrease of 'Trading' for each distinctiveness category.

5.0 CALCULATION OF BIODIVERSITY UNITS

- 5.1 The Biodiversity Metric 4.0 was used to calculate the change in habitat and hedgerow biodiversity units and the overall percentage of gain/loss achieved. Metric calculations have been undertaken by Lucy Moorhouse and reviewed by Alex Perry ACIEEM who has experience completing Biodiversity Metrics for a range of projects across England and Wales.
- 5.2 Conditions for proposed habitats were assigned by taking a precautionary approach with consideration of biotic and operational phase conditions (i.e. which may limit the extent to which 'good' condition is likely to be reached).
- 5.3 A full copy of the Biodiversity Metric 4.0 is provided and should be viewed in conjunction with this report. The Headline Results are provided in Appendix C.

Assumptions & Limitations

- 5.4 It should be noted that the accuracy of habitat area measurements are limited by the baseline data collection and resolution of development proposal plans. In this instance baseline habitat areas have been calculated by cross referencing illustrative Habitats Plans, topo plans, aerial imagery and past photography. Post-development habitat areas have been measured from the Proposed Site Layout Plan and Detailed Landscaping Plans. Reasonable assumptions have been made with regards to the condition of created habitats that could be achieved.
- 5.5 In line with provisions within the Environment Act 2021, the baseline habitat has been categorised as those present on 30 January 2020. As the Site was cleared to make way for development in 2018, the habitat type in January 2020 has been determined through reviewing aerial imagery and past photography. A precautionary approach to habitat condition has been applied in order to minimise any potential limitations.
- 5.6 In order to calculate the net gain of hedgerows, a baseline of 0.001km of native hedgerow in poor condition has been used, despite no hedgerows being present on-site. This is in order to prevent any errors within the metric.
- 5.7 Although the statutory metric by DEFRA is now live, the local planning authority's comment on the planning application detailed that 'This should be demonstrated using the Biodiversity Net Gain (BNG) metric 4.0 which should be submitted along with a BNG plan/assessment.'. Therefore, the biodiversity metric 4.0 has been used for this calculation.

6.0 RESULTS

Overview

- 6.1 The mitigation hierarchy was applied to developing design proposals to avoid and reduce the biodiversity impacts from the scheme. Although the Site is constrained due to size, additional mitigation measures were designed into the layout in the form of new native hedgerow and tree planting, as well as the inclusion of small areas of mixed scrub, other neutral and modified grassland.

Designations

- 6.2 No irreplaceable habitat or designations for nature conservation are present within the on-site land.

Condition Assessment

Baseline Habitats

- 6.3 The Site is part of the wider Kingsmere, Bicester development, which was granted outline planning permission in May 2017. Since then, all other parcels of the development have obtained detailed planning permission and are in varying stages of construction. The entire area of outline planning permission was cleared to make way for development in late 2018, with the Site being used as a site compound ever since.
- 6.4 As set out within Schedule 7A, part 1, paragraph 5 of the Environment Act 2021, when a Site is cleared, the baseline of the Site should be based on the condition of the site on 30 January 2020. As the Site was cleared before this date, it is considered that the cleared Site comprises the true baseline, rather than arable land or existing site conditions. Appendix E shows a photograph of the Site from July 2019, detailing that the Site was entirely cleared, with no vegetation present on this date. Therefore, as this was at the end of the growing season 2019, it can be assumed that the Site in January 2020 would be of the same condition and dominated by bare ground.
- 6.5 Once the Site was cleared it was dominated by un-sealed hardstanding, with a bund of topsoil from the Site's previous agricultural uses along the north of the Site. Whilst there is now limited presence of other neutral grassland within the Site boundary, it is likely that this is predominantly a result of seedling spill associated with its use as a site construction compound, rather than as a result of natural succession. Therefore, the baseline for the Site has been considered to be comprised of bare ground, pre-vegetation from the effects of the off-site landscaping team and post-clearance as an arable field. Bare ground is classified as a type of habitat within BNG

- 6.6 Due to the baseline changing since January 2020, habitat condition assessments of the true baseline habitats have not been possible. The condition of bare ground comprising the true site baseline has been determined using a precautionary approach.. Of the three conditions that bare ground is subject to, as we know the Site has been entirely cleared at this time with no vegetation cover, the bare ground fails both conditions A and B, relating to the vegetation structure on-site. The bare ground does pass condition C, due to a lack of invasive species on-site. Therefore, bare ground within the baseline habitat is considered to be of 'poor' condition.

Proposed Habitats – Detailed Planning Permission

- 6.7 The Site was designed as part of the wider Phase 2 development (granted outline planning permission in May 2017), with greenspace and green infrastructure being planned comprehensively as part of that. This includes Alchester Park directly east of the Site, and a new tree-lined public footpath directly north of the Site. The now separate development of Parcel R does not therefore, have any greater ecological impact than it did prior to the Phase 2 permission being granted. In this context, Biodiversity offsetting/gain in accordance with adopted planning policy has already been accounted for.
- 6.8 However, the development of the Site does present some opportunities to deliver ecological enhancement as part of its own green infrastructure provision.
- 6.9 The proposals for the detailed side of the proposed development are for an 82-bed extra care home, alongside a new road, car park and landscaping. The extra care home, roads, car parks and paths are all categorised as 'Developed Land, Sealed Surface' within the biodiversity metric, totalling 0.51ha.
- 6.10 The mitigation hierarchy was applied to developing design proposals to avoid and reduce the biodiversity impacts from the scheme. Nevertheless, the proposals result in the loss of the baseline at the Site, comprising bare ground, to allow for the development. Nevertheless, due to areas of other neutral grassland currently colonising on the cleared Site, small areas of modified and other neutral grassland have been included within the post-development scenario wherever possible to promote provision of ecologically valuable habitats and increase connectivity throughout the wider development.
- 6.11 To minimise losses in biodiversity at the Site, the following additional measures have been proposed:
- The creation of 0.04ha of mixed scrub in 'moderate' condition within landscaped areas surrounding the development

- A total of 0.02ha of introduced shrub, to include species known to benefit pollinators within the landscaping around the extra care home
- The creation of c. 0.03ha of modified (amenity) grassland in a 'poor' condition
- The inclusion of c. 0.01ha of other neutral grassland in 'poor' condition within the gardens attached to the extra care home
- The addition of 0.01ha of rain garden to act as an attractive Sustainable Drainage System (SuDS) feature along the roadside of the development in 'poor' condition
- Additional trees will be planted across the Site, consisting of 55 'small' trees which are assumed to be in a 'poor' condition
- Planting of c. 288m of new native species hedgerows in 'poor' condition

6.12 Some scattered areas of introduced shrub will be planted throughout the landscaping, to provide different sights, smells and textures for the residents of the extra care home. Included within this category are a variety of different plant and shrub mixes, mainly suited to low-maintenance plants, such as a 'fern grass mix' including a mix of native and non-native sedges, rushes and ferns, as well as more typical shrub mixes including species such as English lavender *Lavandula angustifolia*, white-flowered rock cranesbill *Geranium macrorrhizum* 'Album' and David viburnum *Viburnum davidii*.

6.13 Small areas of mixed scrub will be located around the landscaped area to the north of the Site, as well as along part of the south-western Site boundary and within the car park. This has been identified as 'Native Shrub Planting Mix' within the soft landscaping proposals, and will comprise species including dogwood *Cornus sanguinea*, hazel *Corylus avellana*, goat willow *Salix caprea*, guelder-rose *Virburnum opulus* and alder buckthorn *Rhamnus frangula*. This has been assessed as being able to achieve 'moderate' condition within a development scenario.

6.14 Modified grassland was chosen for the majority of amenity areas close to the road and pathways, as it is expected these will be closely managed and used by residents or members of the public. Therefore, these areas of grassland will likely be dominated by hardwearing grasses such as perennial rye-grass *Lolium perenne* and red fescue *Festuca rubra* with little herbs able to develop. These areas of grassland have been assigned 'poor' condition within the metric due to their likely use for amenity purposes.

6.15 Modified grassland was also chosen for the grassland shown to occur within the extra care home residents' gardens. Although the habitat

'vegetated garden' was considered, as these habitats will be managed by an internal management company and not by the residents themselves, the habitats are unlikely to change from what they are originally sown as. Therefore, any areas of patio have been assigned 'developed land, sealed surface' while the grassland has been assigned 'modified grassland' in 'poor' condition.

- 6.16 Some areas of other neutral grassland have been included at the Site to the rear of the extra care home. These will be seeded using the EM2 General Purpose Meadow Mix, which is dominated by crested dog's-tail *Cynosurus cristatus*, red fescue and smooth meadow-grass *Poa pratensis*, including herbs such as yellow rattle *Rhinanthus minor*, Lady's bedstraw *Galium verum*, common knapweed *Centurea nigra* and red campion *Silene dioica*. Due to the proximity of these areas close to pathways and amenity grassland, management described above, it is expected that these areas will be unlikely to achieve above a 'poor' condition.
- 6.17 The rain garden SuDS features to the east of the Site will be comprised of a range of species which are known to be of value to pollinators, as well as tolerating wet soils. These comprise a mix of native and non-native species, such as dogwood, tufted hair-grass *Descampsia cespitosa* and Jerusalem sage *Phlomis tuberosa*.
- 6.18 A total of 55 urban trees have been included within the proposals, mostly in areas of soft landscaping detailed above. These trees are considered to reach 'small' size in 'poor' condition in the timeframe due to their locations close to roads and pavements.
- 6.19 Proposed habitat types and extents are illustrated on the Proposed Habitats Plan (CSA/6236/102) in Appendix B.

Proposed Habitats – Outline Planning Permission

- 6.20 As part of the hybrid planning application, 0.31ha of the Site is to be put forward for outline planning permission in order to create up to 14 residential housing units, alongside the associated greenspace and hardstanding.
- 6.21 Currently the detail of the outline residential development is still subject to change, and as such this calculation has been based on a potential layout for the development, adequately showing what can be achieved on-site while remaining realistic. This site layout can be seen on the Soft Landscaping plan by Urban Green (Ug 2166 Lan SI Drw 02 - P07).
- 6.22 Roads, houses and associated hardstanding has been classified as 'developed land, sealed surface' within the metric, comprising 0.17ha.

- 6.23 Vegetated gardens have been included to the rear and front of properties, comprising a total of 0.09ha.
- 6.24 A small portion of the Site (0.03ha) has been attributed to open green space, likely to be along the new road and adjacent to car parking. This green space has been allocated as modified grassland in 'poor' condition within the metric, as it will be located in areas which are accessible for the public for amenity purposes.
- 6.25 A total of 12 urban trees have been included, to occur within areas of greenspace on the development. These trees are considered to be 'small' in 'poor' condition due to their locations likely to be close to roads and pavements.

Biodiversity Unit Calculations

- 6.26 Based on the Biodiversity Metric 4.0 calculations, the proposed development alone (inclusive of on-site intervention) would result in the following changes in biodiversity value:
- Habitats: -0.40 units (equating to a -21.10% loss)
 - Hedgerows: +0.54 hedgerow units (+26920.00%)
- 6.27 A summary of the changes in habitat and hedgerow units is provided in Table 1 below.

Table 1. Quantitative assessment of biodiversity impact

| Factor | Habitats (ha/units) | Hedgerows (km/units) |
|--|---------------------|----------------------|
| Baseline area/length | 0.94ha | 0.00 |
| Baseline units | 1.88 | 0.00 |
| Area/length retained | 0.00 | 0.00 |
| Units retained | 0.00 | 0.00 |
| Area/length enhanced | 0.00 | 0.00 |
| Units enhanced | 0.00 | 0.00 |
| Area/length lost | 0.94 | 0.00 |
| Units lost | 1.88 | 0.00 |
| Area/length created | 0.94 | 0.28 |
| Units created | 1.48 | 0.54 |
| Post-intervention* units | 1.48 | 0.54 |
| | | |
| Total net unit change | -0.40 | +0.54 |
| Total project biodiversity % change | -21.10% | 26920.00% |

*Post-intervention – including retention, creation and enhancement

- 6.28 The Biodiversity Metric calculation demonstrates that this scheme in isolation would result in a loss of habitat units. Multiple companies within Oxfordshire offer offsetting schemes for developers to compensate for habitat loss on-site.

6.29 No habitats of 'moderate', 'high' or 'very high' distinctiveness will be lost under the proposed scheme. Proposed habitats are illustrated on the Proposed Habitats Plan in Appendix B.

Ecological Functionality

6.30 A qualitative assessment of biodiversity net gain should also be undertaken to ensure that scheme design delivers the best and most appropriate habitat measures which maintain and enhance ecological functionality of a site and benefits for local biodiversity. A qualitative assessment of the biodiversity impact of the scheme is provided in Table 2.

Table 2. Qualitative Assessment of Biodiversity Impact

| Baseline Habitat | Ecological Function | Impact | Post-Development |
|----------------------------|--|---------------------------|--|
| Urban – Bare Ground | Provides very limited habitat for local wildlife | Loss of resource (0.94ha) | A number of interconnecting habitats to be created on-site, including those suitable for pollinators and nesting birds |

6.31 The baseline of the Site does not include any linear features and is formed of bare ground. Therefore, no ecological functionality will be lost at the Site. Significant new hedgerow planting will be delivered across the Site, as well as new mixed scrub, grassland and rain garden habitat being provided within areas of public open space, to include many species listed on the Royal Horticultural Society (RHS) Plants for Pollinators list.

6.32 The Environment Act 2021, which comes into effect for all developments submitted to the planning authority after 12 February 2024, states that a net gain of 10% will be required at almost all new development sites. Nevertheless, as this application was submitted in late 2023, a net gain of 10% is not considered to be required at the Site.

6.33 This is also similar to local planning policy, as the Cherwell Local Plan details that while all development Sites need to achieve a net gain, no number is given as to what percentage. Therefore, we believe the Site needs to offset a total of 0.40 habitat units, in order to create measurable net gains at the Site.

Trading Summary

6.34 The proposals will not result in the loss of any habitats of 'moderate', 'high' or 'very high' distinctiveness. Nevertheless, due to the current net loss currently present on-site, the trading summary is not satisfied.

Management and Monitoring

- 6.35 Habitats on-site will be managed to the condition specified within the Metric for a period of at least 30 years. The management of the habitats will be set out within a Landscape and Ecological Management Plan (LEMP).

7.0 DISCUSSION

- 7.1 Biodiversity Net Gain calculations, using the Biodiversity Metric 4.0 have been undertaken for the proposed development at Parcel R, Kingsmere, Bicester. Baseline habitat calculations have been informed by UKHab classification survey work, a desktop study review of aerial imagery. Post-development calculations have been based on the Proposed Site Layout Plan by Corstorphine & Wright (21413-CWA-BC-XX-DR-A-2011 Rev P24) and the Soft Landscape Plan by Urban Green (UG_2166_LAN_SL_DRW_02). Assumptions and limitations to the assessment have been highlighted where relevant, and identified in the Metric calculator which should be reviewed in conjunction with this report.
- 7.2 The detailed landscaping plans show the planting of c. 288m of new native hedgerow, while the baseline at the Site has no hedgerows. Therefore, the scheme can deliver a net gain in hedgerow units, amounting to c. **+0.54 hedgerow units (+26920.00%)**.
- 7.3 A habitat loss of **-0.40 habitat units (-21.10%)** was identified following the completion of baseline and post-development calculations, due to the loss of an area of bare ground which encompasses the entirety of the Site's baseline.

8.0 REFERENCES

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Appendix A

Habitats Plan (CSA/6236/101C)

Appendix B

Biodiversity Net Gain Post-Intervention Plan (CSA/6236/102)

Appendix C

Biodiversity Metric 4.0
(Headline Results)

Appendix D

Aerial Photography (July 2019)

CSA

environmental

Dixies Barns, High Street,
Ashwell, Hertfordshire
SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Office 20, Citibase,
95 Ditchling Road,
Brighton BN1 4ST

t 01273 573871
e brighton@csaenvironmental.co.uk
w csaenvironmental.co.uk

9 Hills Road,
Cambridge,
CB2 1GE

t 07713 468300
e cambridge@csaenvironmental.co.uk
w csaenvironmental.co.uk

3 Ripple Court,
Brockridge Park, Twynning,
Tewkesbury GL20 6FG

t 01386 751100
e tewkesbury@csaenvironmental.co.uk
w csaenvironmental.co.uk

Wizu Workspace, 32 Eyre St,
Sheffield City Centre,
Sheffield S1 4QZ

t 07838 290741
e sheffield@csaenvironmental.co.uk
w csaenvironmental.co.uk

Worting House,
Church Lane, Basingstoke,
RG23 8PY

t 01256 632340
e basingstoke@csaenvironmental.co.uk
w csaenvironmental.co.uk