LINTON RISE

CARVYNICK HOLIDAY PARK

SUMMERCOURT, CORNWALL, TR8 5AF

BIODIVERSITY NET GAIN ASSESSMENT

January 2024

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Signature: 

Position: Principal Ecologist & Director

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1. INTRODUCTION

1.1. Background

Spalding Associates (Environmental) Ltd has been commissioned by Kingsley Developments (SW) Ltd to undertake biodiversity metric calculations for the proposed development of 40 holiday lodges on a parcel of land known as Linton Rise currently used as a camping field at Carvynick Holiday Park, Summercourt. The planning application includes new landscaping and planting proposals (Figure 1).

The National Planning Policy Framework 2023 and the Cornwall Local Plan Strategic Policies 2010-2030 require development to show Biodiversity Net Gain.

The Cornwall Climate Emergency Development Plan Document requires a minimum 10% biodiversity net gain for 'major' development proposals, secured for at least 30 years in accordance with an agreed management plan as set out in Policy G2[1]

Figure 1. Extract of the Illustrative Site Plan for 40 holiday lodges. CAD Architects Ltd, Drawing No. 3253.2.10

[1] Climate Emergency Development Plan Document. 2023. Cornwall Council

2. OVERVIEW OF THE DEFRA BIODIVERSITY NET GAIN METRIC CALCULATOR

Policy 2 of the Cornwall Climate Emergency Development Plan Document requires that biodiversity is measured, both before and after development, according to the most up to date calculation tool.

The metric tool automatically scores different habitat types by predetermined relative biodiversity values referred to as units. The pre-development site is surveyed, and the habitats identified and mapped by a fully qualified ecologist. The metric tool provides the baseline unit score which is then used in designing the development. The biodiversity net gain is therefore given a score when the number of baseline biodiversity units are subtracted from the number of units that the design is predicted by the ecologist to provide.

Net results are tabulated as ‘headline results’ within the calculator tool; these have (necessarily) been replicated from the metric tool screen by taking screen shots.

Net gain for hedges is treated separately to other habitat units; net gain is expected for each and not in combination.

3. METHOD

3.1. Site assessment

An Extended Phase 1 habitat survey of the site was carried out in January 2024 by Spalding Associates (Environmental). During the survey the habitats were also assessed following the UK Habitat Classification System[2] (UK Habs) which is methodology used for biodiversity net gain assessment. The work and report for this assessment has been carried out by Aidan Hulatt BSc (Hons) MSc who is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM). The work has been completed in accordance with the standards expected of a member of CIEEM.

3.2. Biodiversity Metric tool version

The updated calculations have been undertaken using the Biodiversity Metric 4.0 calculation tool which was released on the 28th March 2023.

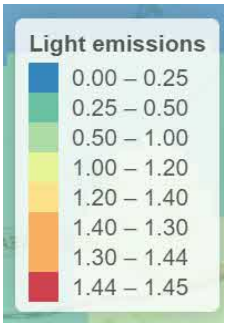
3.3. Habitat Areas and Hedge Lengths

The habitats have been assessed for the purposes of this report in accordance with the technical guidance for the Biodiversity Metric 4.0 Calculation Tool User Guide. The approximate area (m^2) of habitats on site were calculated by using MapInfo© GIS to form polygons for pre- and post-construction. Area measures have been converted to hectares as these are the working units of the calculator. On-site hedgerows have been measured and converted into kilometres. The post-construction areas and lengths have been calculated based upon the latest available site plans, see reference documents below.

Illustrative Site Plan (40 Holiday Lodges) 3253.2.10

3.4. Connectivity to local nature network /opportunity areas

The site has also been assessed for its proximity to local nature network and opportunity areas as well as light emissions. This has been carried out using the LAGAS Natural Capital Information and Management Hub mapping tool, accessed on 5th January 2024. This tool displays links to the existing Nature Network and opportunities for habitat creation in the categories: Woodland, Wetland, Heathland and Other Corridor Opportunities. This site has been assessed in relation to these existing areas and opportunities.



Light emissions have also been assessed for this site. This map displays the mean radiance (millicandela per m^2) across the county with red being the highest and blue being the lowest (extract right).

[2] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Trweek, J. 2020. The UK Habitat Classification User Manual Version 1.1

4. PRE-DEVELOPMENT (MAP 1)

4.1. Baseline habitats

Map 1 indicates the existing on-site habitats as extracted from the baseline survey and converted to UK Habs. The application site covers approximately 1.4934 hectares of land north of Carvynick Holiday Park. The A3058 road lies adjacent to the site's northern boundary and the village of Summercourt and the A30 are 600 metres east. The site is in a rural location surrounded by agricultural fields.

The primary habitat is a low diversity amenity grassland classified as 'modified grassland in poor condition' and covers 1.3558 hectares. It is under active management and regularly cut forming part of a camping field during the summer. The condition assessment failed to achieve moderate condition for the grassland due to the low number of species. The sward was dominated by grasses including Perennial Rye-grass *Lolium perenne,* Yorkshire Fog *Holcus lanatus* and Cock's-foot *Dactylis glomerata.* There are relatively few forbs present with Creeping Buttercup *Ranunculus repens*, Ribwort Plantain *Plantago lanceolata* and Broad-leaved Dock *Rumex obtusifolius* occasional.

There is a strip of dense Bramble scrub towards the north-west of the site of 0.0409 hectares. At the existing southern entrance through a break in the hedgebank is an area of hardstanding and a 3m wide access track that that is located along the south, and part of the west and north headlands of the site. This area of 'Urban – artificial unvegetated, unsealed surface' covers 0.0967 ha.

4.2. Baseline hedgerows

There are four sections of linear habitat on the site that comprise the north, south and west boundaries. Their type, length and condition is shown in Table 1.

Table 1. Hedgerows present pre-construction

Hedge number	Hedgerow type	Length (km)	Condition
H1	Native hedgerow – associated with bank	0.037	Poor
H2	Native hedgerow	0.136	Good
H3	Native hedgerow – associated with bank	0.077	Poor
H4	Species-rich native hedgerow – associated with bank	0.124	Moderate

4.3. Connectivity to local nature network /opportunity areas and light spill

The site is outside of an existing or opportunity nature network area, see Figure 2. It is situated in a rural and exposed location which is surrounded by farmland. There are both pasture and arable fields in the wider landscape that are bounded by traditional Cornish hedgebanks. The main A30 dual carriageway runs approximately 600 metres to the southeast of the site where the village of Summercourt is situated. The A3058 road is directly adjacent to the northern

boundary. These roads limit the connectivity of the site to nature network areas to the east and south of the site which are associated with the Ladock, St Enoder and Trendeal Woods County Wildlife Site (CWS). To the west of the site is a small opportunity area that is connected to the site by the southern boundary (H3) and further west is the Tredinnick CWS.

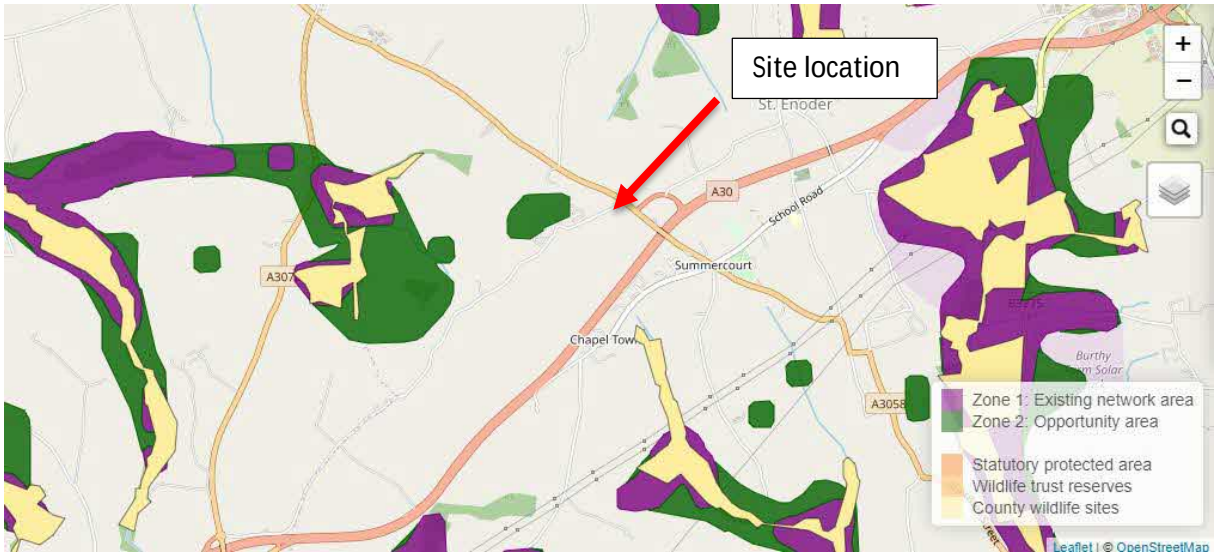


Figure 2. Site location and exiting and opportunity nature network areas https://lagas.co.uk/app/product/netgain_vectorzones. Accessed 09/01/2024

Despite its rural location this site is in an area of medium light spill due to its proximity to the A30 and Summercourt. There is also likely to be some localised light spill from the holiday park and Linton Rise Cottage (Figure 3)

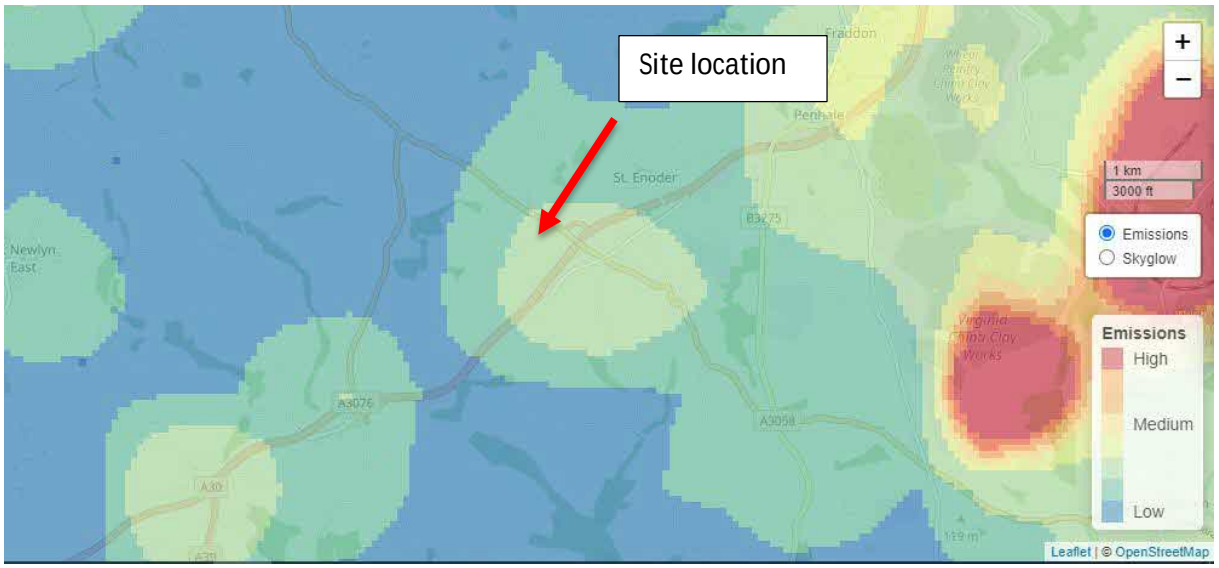


Figure 3. Light emissions https://lagas.co.uk/app/product/light-maps Accessed 09/01/2024

5. POST-DEVELOPMENT (Map 2)

The post-construction habitats are based upon the illustrative layout design provided by CAD Architects (drawing number 3253.2.10). Habitat creation recommendations are based on the principles of the mitigation hierarchy i.e., habitats should be retained where possible, enhanced where appropriate and any losses mitigated for as a last resort.

The areas of highest conservation value are the boundaries which will be either retained or enhanced to a higher distinctiveness category. Much of the low diversity will be lost due to development, however, wide grassland headlands will be enhanced and planted with new trees of predominantly native species.

5.1. Post-construction habitats

An area of 0.3099 ha of low distinctiveness grassland around the perimeter of the site will be protected during construction and enhanced to medium distinctiveness 'other neutral grassland' in moderate condition. Species richness will need to be enhanced with areas of longer tussocky grassland that are less frequently managed adjacent to flowering meadow style grassland that is more regularly cut (See Appendix 1 for grass seed mixes).

The area of Bramble scrub will be lost but post-construction a new larger area of 'Mixed scrub' covering 0.0627 ha will be created using plants listed in Table 2. Adjacent to the new lodges will be amenity grassland categorised as 'modified grassland' in poor condition covering 0.4177 ha. This will be a hard wearing seed mix that is tolerant of regular mowing but should include a moderate diversity of grasses and forbs such as Emorsgate Flowering Lawn EL1 https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/flowering-lawn-mixture/

Table 2. List of species appropriate for gap fill planting of hedgerows and scrub creation

Scientific Name	Common Name
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Ilex aquifollia	Holly
Ligustrum vulgare	Wild Privet
Rosa canina	Dog Rose
Sambucas nigra	Elder
Ulex europeaus	European Gorse

Across the site will be planted 40 small and 25 medium trees selected from the list in Table 3. Trees will be predominantly native species and tolerant of the exposed site conditions.

Table 3. List of appropriate tree species

Scientific Name	Common Name
Alnus glutinosa	Alder
Betula pendula	Silver Birch
Crataegus monogyna	Hawthorn
Ilex aquifolia	Holly
Malus sylvestris	Crab Apple
Prunus avium	Wild Cherry
Quercus robur	Pedunculate Oak
Quercus petraea	Sessile Oak
Sorbus acuparia	Rowan
Taxus baccata	Yew

The total area of the new development is approximately 0.7031 ha of 'Urban – developed land, sealed surface'. This comprises new access roads, pavements, and new buildings.

5.2. Post-construction hedgerows

H1 will be enhanced from poor to moderate condition by management of the dominant Bramble vegetation and some gap fill planting with species from Table 2.

H2 is a 'native hedgerow' in 'good' ecological condition that will be retained through appropriate management.

H3 will be enhanced to a 'native species-rich hedgerow with trees associated with a bank' through gap fill planting of the open sections and appropriate management. The break in the hedgebank for the existing access will be filled to create greater habitat connectivity along the southern boundary.

H4 will be enhanced to a 'native species-rich hedgerow with trees associated with a bank' through gap fill planting of the open sections and appropriate management.

6. METRIC CALCULATION RESULTS AND DISCUSSION

6.1. Baseline Habitat Units

The baseline calculation for this site is 2.88 Habitat units. The baseline linear features are 2.76 Hedgerow units.

6.2. Results

Table 4 displays the metric calculation "headline results" as a representation of the habitats displayed in the landscape plan and supporting documents. Full details of calculations can be found within the filled metric file "Biodiversity Metric 4.0 Linton Rise_Carvynick Holiday Park".

On-site baseline	*Habitat units*	2.88	
	Hedgerow units	2.76	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	6.45	
	Hedgerow units	5.10	
	Watercourse units	0.00	
On-site net change (units & percentage)	*Habitat units*	3.57	124.20%
	Hedgerow units	2.34	84.63%
	Watercourse units	0.00	0.00%

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	3.57
	Hedgerow units	2.34
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	124.20%
	Hedgerow units	84.63%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

Table 4. Headline results from metric calculator. File reference: "Biodiversity Metric 4.0 Linton Rise_Carvynick Holiday Park".

6.3. Discussion of results

If the site is developed with the habitat interventions recommended in this report, and calculated by the latest Defra metric, it has the potential to deliver 6.45 Habitat units on-site which would be total net unit change of 3.57 units. This would represent an 124.20% biodiversity gain for the development in habitat units.

For linear hedgerow habitats if the recommendations are followed it has the potential to deliver 5.10 units on-site which would represent a net unit change of 2.34 Hedgerow units. This would represent an 84.63% biodiversity gain for the development in hedgerow units.

The production of a Biodiversity Management and Monitoring Plan secured through a planning condition would provide details of how to achieve the post construction net gains proposed in this report and should include planting specifications and schedules to ensure that appropriate species are used in the final design.

6.4. Further recommendations to enhance the value of the site

The metric considers habitats but does not consider the presence of species. Additional enhancements for the site could include:

Buddleia is present on H3 which is considered invasive and non-native although it is not listed on Schedule 9 of the Wildlife and Countryside Act 1981, as amended. Removal of this plant species and replacing with native plants will enhance the biodiversity value of the site.

Bat and bird boxes should be incorporated into the design of the site in line with Policy G1 of the Climate Emergency Development Plan Document.

A site wide lighting plan should be developed with new artificial lighting directed away from the boundaries to retain their use as flight lines for bats and habitat for other nocturnal wildlife.

Enhancements for invertebrates should be incorporated into the design through the use of ‘bee bricks’ and habitat piles made from brash from the site to create suitable habitat for a range of species.

APPENDIX 1

Tables with suggested seed mixes for grassland areas

Emorsgate EM10 Tussock seed mixture

Contains tussock forming grasses and wildflowers which can cope with competition from taller vegetation. Once established requires little or no maintenance. https://wildseed.co.uk/product/mixtures/complete-mixtures/meadow-mixtures-for-specific-soils/tussock-mixture/

Wildflowers 20%	*Achillea millefolium*	Agrimony
	Arctium minus	Lesser Burdock
	Centaurea nigra	Common Knapweed
	Centaurea scabiosa	Greater Knapweed
	Chaerophyllum temulum	Rough Chervil
	Cruciata laevipes	Crosswort
	Daucus carota	Wild Carrot
	Dipsacus fullonum	Wild Teasel
	Filipendula ulmaria	Meadowsweet
	Galium album	Hedge Bedstraw
	Knautia arvensis	Field Scabious
	Lathyrus pratensis	Meadow Vetchling
	Leucanthemum vulgare	Oxeye Daisy
	Lotus corniculatus	Birdsfoot Trefoil
	Malva moschata	Musk Mallow
	Plantago lanceolata	Ribwort Plantain
	Poterium sanguisorba	Salad Burnet
	Silene dioica	Red Campion
	Vicia Cracca	Tufted Vetch
Grasses 80%	*Alopecurus pratensis*	Meadow Foxtail
	Cynosurus cristatus	Crested Dogstail
	Dactylis glomerata	Cocksfoot
	Festuca rubra ssp rubra	Strong-creeping Red Fescue
	Holcus lanatus	Yorkshire Fog
	Lolium perenne	Perennial Ryegrass
	Poa pratensis	Smooth-stalked Meadow-grass
	Schedonorus arundinaceus	Tall Fescue

General purpose meadow mixture for use across a range of soil and site conditions. Eg Emorsgate EM2 - General Purpose Meadow Mixture - https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/standard-general-purpose-meadow-mixture/

	Latin name	**Common name**
Wild flowers 15%	*Betonica officinalis*	Betony
	Centaurea nigra	Common Knapweed
	Daucus carota	Wild Carrot
	Filipendula ulmaria	Meadowsweet
	Galium verum	Lady's Bedstraw
	Leucanthemum vulgare	Oxeye Daisy
	Lotus corniculatus	Birdsfoot Trefoil
	Malva moschata	Musk Mallow
	Plantago lanceolata	Ribwort Plantain
	Primula veris	Cowslip
	Prunella vulgaris	Selfheal
	Ranunculus acris	Meadow Buttercup
	Vicia cracca	Tufted Vetch
Grasses 85%	*Agrostis capillaris*	Common Bent
	Cynosurus cristatus	Crested Dogstail
	Festuca rubra	Red Fescue
	Poa pratensis	Smooth-stalked Meadow-grass

Seed mix appropriate for use in frequently mown areas adjacent to paths and buildings. Eg Emorsgate Flowering Lawn EL1
https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/flowering-lawn-mixture/

	Scientific Name	**Common Name**
Wildflowers (20%)	*Achillia millefolium*	Yarrow
	Anthyllis vulneraria	Kidney Vetch
	Betonica officionalis	Betony
	Centurea nigra	Common Knapweed
	Galium verum	Lady's Bedstraw
	Gallium album	Hedge Bedstraw
	Knautia arvensis	Field Scabious
	Leontodon hispidus	Rough Hawkbit
	Leucanthemum vulgare	Oxeye Daisy
	Lotus corniculatus	Birdsfoot Trefoil
	Medicago lupulina	Black Medic
	Plantago lanceolata	Ribewort Plantain
	Plantago media	Hoary Plantain
	Primula veris	Cowslip
	Prunella vulgaris	Selfheal

	Ranunculus acris	Meadow Buttercup
	Ranunculus bulbosa	Bulbous Buttercup
	Trifolium pratense	Wild Red Clover
	Trifolium repens	White Clover
Grasses (80%)	*Agrostis capillaris*	Common Bent
	Cynosurus cristatus	Crested Dogstail
	Festuca rubra	Red-fescue
	Phleum bertolonii	Smaller Cat's-tail
	Poa pratensis	Smooth-stalked Meadow-grass