

Habitat type	UKHab Code	Area (ha)	Condition	Strategic Significance	Required action to meet trading rules	Ecological Baseline
						Total Habitat Units (HU)
<i>Holcus</i> – <i>Juncus</i> neutral grassland; Rushes dominant	g3c8, 15	0.224	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	1.03
Total Habitat Units		2.40 ha				11.54

3.1.2 Off-site Baseline

A total of 0.48 ha of off-site grassland has been included in the baseline. All three grassland habitats have been classed as other neutral grassland. Two areas are located within the fenced perimeter of the Carpenter Ltd. site. These two areas were classed as poor and fairly poor respectively. Both these habitats fall outside the LWS but are in close proximity (~200 meters) are therefore considered to be in a desirable location, with a strategic significance multiplier of 1.1 applied.

The third area falls within the LWS and has an *estimated* condition of fairly good. Unlike the site, this area was not disturbed in 2022 after installation of a retaining wall and is therefore assumed to be in a better condition than found within the site boundary. The Derbyshire Wildlife Trust has requested that enhancements be prioritized within the LWS, and Centrica Ltd. is eager to accommodate this request. In the absence of a condition assessment for the extended LWS, we propose assuming a condition of fairly good, which would facilitate the planned enhancements.

Table 3: Habitat areas, condition assessments and ecological baseline units.

Habitat type	UKHab Code	Area (ha)	Condition	Strategic Significance	Required action to meet trading rules	Ecological Baseline
						Total Habitat Units
<i>Holcus</i> - <i>Juncus</i> neutral grassland;	g3c8	0.333	Fairly Poor	Location desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	2.20
Other neutral grassland	g3c	0.04	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	0.16
Other neutral grassland	g3c	0.11	Fairly Good	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	1.27
Total Habitat Units		0.48 ha				3.62

3.1.3 Proposed Development Infrastructure

The proposed development includes three infrastructure habitats presented in Table 4 below.

Table 4: Summary of Proposed Development Infrastructure.

Habitat	UKHab code
Developed land; sealed surface, Solar panel array	u1b6, 83
Developed land; sealed surface, industrial building	u1b6, 817
Developed land; sealed surface, industrial building	u1b6, 817
Artificial unvegetated – unsealed surface, Access Track	u1c, 839

The elements of the Proposed Development and the habitat types which they will impact are described in Table 5. The inverters are attached to the solar panels and do not have a footprint themselves and are not included in further calculations. The Access Track/ Haulage Road is retained grassland rather than created habitat (see 3.1.4.).

UKHAB 2.01 requires solar panel arrays to be coded as Developed land; sealed surface, irrespective of habitats present below them. Therefore, the strips of panels will not be retained as grassland but categorised under habitat created as u1b6.

Table 5: Infrastructure Elements and Coincident Habitats.

Infrastructure Element	Area (ha)	Coincident Habitats	UKHab Code
Solar Photovoltaic Array x 1818	0.47	- Holcus – Juncus neutral grassland; Rushes dominant - Deschampsia neutral grassland; Scattered rushes - Other neutral grassland; Scattered rushes	- g3c8, 15 - g3c7, 14 - g3c, 14
Transformer	0.001	Other neutral grassland; Scattered rushes	g3c, 14
Inverter x 3	N/A	- Other neutral grassland - Holcus – Juncus neutral grassland; Rushes dominant	- g3c, 14 - g3c8, 15
Access Track / Haulage Road	0.059	Holcus – Juncus neutral grassland	g3c8
Total	0.53		

3.1.4 Habitats Retained

Habitats on site which are to be retained include the road, *Holcus – Juncus* neutral grassland (g3c8), Other neutral grassland; scattered rushes (g3c, 14) and bramble scrub. The “Other neutral grassland; Scattered rushes” is retained rather than enhanced, since enhancement from a moderate to good condition is considered ambitious for grassland with solar panels, the condition score for this habitat is left as is. The “*Holcus -Juncus* neutral grassland” is the narrow access track strip, which aims at retaining the grassland (reinstating where necessary). Due to the small area of this habitat (<0.06 ha) no enhancement within this area is proposed as the moderate baseline condition of this grassland would have made BNG gains insignificant, and the focus was instead placed on the adjacent grassland.

Areas of each habitat pre and post development to be retained without habitat creation or enhancement are summarised in Table 6.

Table 6: Habitats retained pre and post development.

Habitat type	UKHab Code	Area (ha) pre-development	Area (ha) post development	Change in area (ha)
Developed land; sealed surface, Road	u1b6, 800	0.595	0.595	0
<i>Holcus – Juncus</i> neutral grassland	g3c8	0.059	0.059	0
Other neutral grassland; Scattered rushes	g3c, 14	0.439	0.314	0.125

Habitat type	UKHab Code	Area (ha) pre-development	Area (ha) post development	Change in area (ha)
Bramble Scrub	h3h	0.022	0.022	0
Total		1.115	0.99	0.125

3.2 Post-Development Habitat Creation:

The post-development habitats (Figure 3) are shown on the Illustrative Landscape Masterplan which outline the areas for the proposed post-development habitat creation and enhancement. This relies on enhancing the existing neutral grasslands within the Site and adjacent to the site boundary within Dinting Lodge Grassland LWS.

3.2.1.1 Individual trees

A total of four individual trees are proposed to be planted along hedgerow 2. A hedgerow with trees is defined as more/equal to two prominent trees <20m apart over most of the hedgerow length. Therefore, these trees have been treated as individual trees since they will be grouped together and planted along a c. 25m stretch in the southern extent, and as such the hedgerows would fail this requirement of hedgerow with trees. As the proposed trees to be planted would border a LWS they have been classed as a “rural” tree as opposed to an “urban” e.g. planted along roadways in cities. The proposed species include two silver birch (*Betula pendula*) and two wild cherry also referred to as “gean” (*Prunus avium*). All trees to be planted will be native species.

The area used within the metric was calculated using the ‘tree helper’ within the metric. The tree size is 8-10 cm diameter, and as such, falls within the “small” category.

To meet a target condition of “moderate” the individual trees will need to pass at least 3 criteria of the Condition Assessment requirements (Appendix B: Table 1). It is anticipated that criteria A, B and F will be fulfilled. Time to target condition is 27 years. Maintenance for the following 5 years is included and described in Figure 4.

Table 8: Individual trees to be planted under the proposed landscaping scheme

Habitat	UKHab code	Area (ha)	Strategic Significance	Target Condition	Habitat Units
Individual trees: Rural	N/A	0.0163	Location desirable but not in local strategy	Moderate	0.05

3.2.2 On-Site Hedgerow Creation

Two hedgerows are proposed to be created along the north and south site boundaries. Hedgerow 1 will be placed along the northeast boundary on the inside of the palisade fencing. Hedgerow 2 will be placed along the southeast boundary and similarly placed along the inside of the palisade fencing. These hedgerows will provide screening for pedestrians making use of the adjacent footpath and from the Dinting lodge grassland. Species composition and spacing for both hedgerows are identical and should include hawthorn (*Crataegus monogyna*), field maple (*Acer campestre*), hazel (*Corylus avellana*), guelder rose (*Viburnum opulus*), holly (*Ilex aquifolium*), and dog rose (*Rosa canina*). All species are native species therefore the UKHab classification for these proposed hedgerows is ‘Species-rich native hedgerow’ (h2a5). The maximum height for these hedgerows is 2 meters to limit potential shading onto the photovoltaic panels. Although tree species are included in the planting list, their height is limited to 2 meters and would not count towards the classification *species-rich hedgerow with trees* as these need to have a distinguishable independent structure.

Hedgerow 1 has a length of 128 meters, of which 20 meters fall inside the LWS. Hedgerow 2 has a length of 143 meters, of which 48 meters fall inside the LWS. The appropriate strategic significance multiplier has been applied, 1.15 for the areas inside the LWS, and 1.1 for the areas adjacent to the LWS.

To meet a target condition of “Good” the hedgerows will need to pass at least 6 criteria of the Condition Assessment requirements, and not have more than 1 failure per functional group (Appendix B: Table 2). It is anticipated that A1, B1, B2, C1, D1 and D2. will be fulfilled. Time to target for species-rich native hedgerow is 5 years.

The proposed maintenance for the next 5 years includes cultivating, control of insects and fungus, pruning, replacement planting of failed saplings, weeding, litter collection, watering, strimming, pruning and repairs. Additional information can be found on the landscaping plan (Figure 4). With these measures, it is expected that at least 6 of the criteria for species rich hedgerows will be passed by the end of the proposed maintenance schedule, by which time the hedgerow will have reached its target condition.

Table 9: Proposed hedgerow creation under the post-development.

Hedgerow number	Habitat	UKHab code	Length (km)	Condition	Strategic Significance	Target Condition	Hedgerow Units
1a	Species-rich native hedgerow	h2a5	0.108	Good	Location desirable but not in local strategy	Good	0.93
1b	Species-rich native hedgerow	h2a5	0.02	Good	Formally identified in local strategy	Good	0.18
2a	Species-rich native hedgerow	h2a5	0.048	Good	Formally identified in local strategy	Good	0.43
2b	Species-rich native hedgerow	h2a5	0.095	Good	Location desirable but not in local strategy	Good	0.82
Total			0.301				2.66

3.2.3 On-Site Habitat Enhancement

On-Site enhancement around the solar array is proposed by seeding N7 Wetland meadow mix by Naturescape (or similarly available wetland meadow seed mix type). This seedmix includes a mix of 22 native wildflower species (N7F) and 12 species of grass (N7G) and planted at a density of 5 grams per square meter. Table 10 shows the grassland habitats proposed to be enhanced as part of the development under the Post Development.

To meet a target condition of “moderate” the grassland will need to pass at least 3 criteria of the Condition Assessment requirements, including essential criteria A (Appendix B: Table 3). Time to target condition is 8 to 10 years.

The neutral grassland will also need to meet requirements described in the UKHAB V2.01 guidance shown in Table 10

Table 10: UKHab V2.01 requirements for neutral grassland

Criteria	Description
1	>20% cover of broadleaved herbs and sedges
2	>8 species per square meter(including forbs, grasses, sedges and rushes, and excluding bryophytes)
3	One or more grass species that is not generally sown for intensive agricultural production (i.e. Rye-grasses <i>Lolium spp.</i> , Timothy <i>Phleum pratense</i> , Cock's-foot <i>Dactylis glomerata</i> , Meadow fescue <i>Festuca pratensis</i> is at least abundant
4	Cover of Rye-grasses <i>Lolium sp..</i> and white clover <i>Trifolium repens</i> , where present, is <30%

It is also proposed that a yearly hay-cut is introduced to at the end of August-September to reduce proliferation of a single species. Mowing and strimming is described in the Illustrative Landscape Masterplan.

Table 11: Areas of each habitat to be enhanced.

Habitat	UKHab code v2.01	Area (ha)	Condition	Strategic Significance	Target Condition	Habitat Units
<i>Holcus – Juncus</i> neutral grassland, Rushes dominant	g3c8, 15	0.3042	Poor	Location desirable but not in local strategy	Moderate	2.28
<i>Deschampsia</i> neutral grassland; Scattered rushes	g3c7, 14	0.4475	Fairly Poor	Location desirable but not in local strategy	Moderate	3.69
<i>Deschampsia</i> neutral grassland; Scattered rushes	g3c7, 14	0.075	Fairly Poor	Formally identified in local strategy	Moderate	0.65
<i>Holcus – Juncus</i> neutral grassland, Rushes dominant	g3c8, 15	0.11	Poor	Formally identified in local strategy	Moderate	0.86
Total		0.9367				7.48

3.2.4 Off-Site Habitat Enhancement

Off-Site enhancement is proposed within the adjacent areas of the site and inside the LWS. Enhancements are proposed by seeding similarly as discussed in 3.2.3. This would be combined with regular vegetation maintenance. Table 11 shows the habitats proposed to be enhanced as part of the development under the proposed development.

To meet a target condition of “Good” the grassland will need to pass at least 5 criteria of the Condition Assessment requirements, including essential criteria A and F. Time to target condition is 8 to 15 years.

The neutral grassland will also need to meet requirements described in the UKHAB V2.01 guidance (Table 10).

It is also proposed that a yearly hay-cut is introduced to at the end of August-September to reduce proliferation of a single species.

Table 11: Areas of grassland to be enhanced.

Habitat	UKHab code v2.01	Area (ha)	Condition	Strategic Significance	Target Condition	Habitat Units
Other neutral grassland	g3c	0.333	Fairly Poor	Location desirable but not in local strategy	Good	3.63
Other neutral grassland	g3c	0.04	Poor	Location desirable but not in local strategy	Good	0.38
Other neutral grassland	g3c	0.11	Fairly Good	Formally identified in local strategy	Good	1.46
Total		0.483				5.47