



15th November 2021

Amendment of open space in south east of site: West End Nursery, Roundstone Lane, Angmering, West Sussex

This note provides an updated ecological evaluation and management plan for the proposed changes for the approved planning application at *West End Nursery, Roundstone Lane, Angmering, West Sussex*. The previous proposal included an attenuation basin with planting and children's play space. The following statement provided by Leigh Kearsey – Engineering Manager at Cala Homes sets out the issues and henceforth the need to amend the proposals.

“During the previous use of the site the area in the south east corner of the development was utilised as a large infiltration basin for the rainwater runoff from the greenhouses. The ground was porous enough that runoff would fill the basin and then drain into the ground over time. This area of the site had one of the better infiltration rates due to the lower levels of clays within the soil and as such was selected to locate the main proposed infiltration tank for the south and east parts of the site. This would also have the advantage of maintaining the original route of rainwater runoff from the site. Original designs incorporated a soakaway tank below ground with a ‘pond above’ to maintain the concept of the original site.

Unfortunately, during the construction due to various reasons approximately 12,500 m³ of excess soil material was produced from site and had been stockpiled adjacent to the southeast open space. This material was such that the pond area became a mound over the top of the infiltration tank. The area is raised relative to the houses and generally falls to the north and west as opposed to the south and east. With only the boundaries falling in the original direction. There is a benefit to this in that overland runoff will generally be constrained onto the site to soak into the ground and runoff to the south an east is limited to the boundaries only. It has an added advantage of limiting the visual impact of the site when viewed from the east during the winter months when the hedges and trees on that boundary have no canopies.”

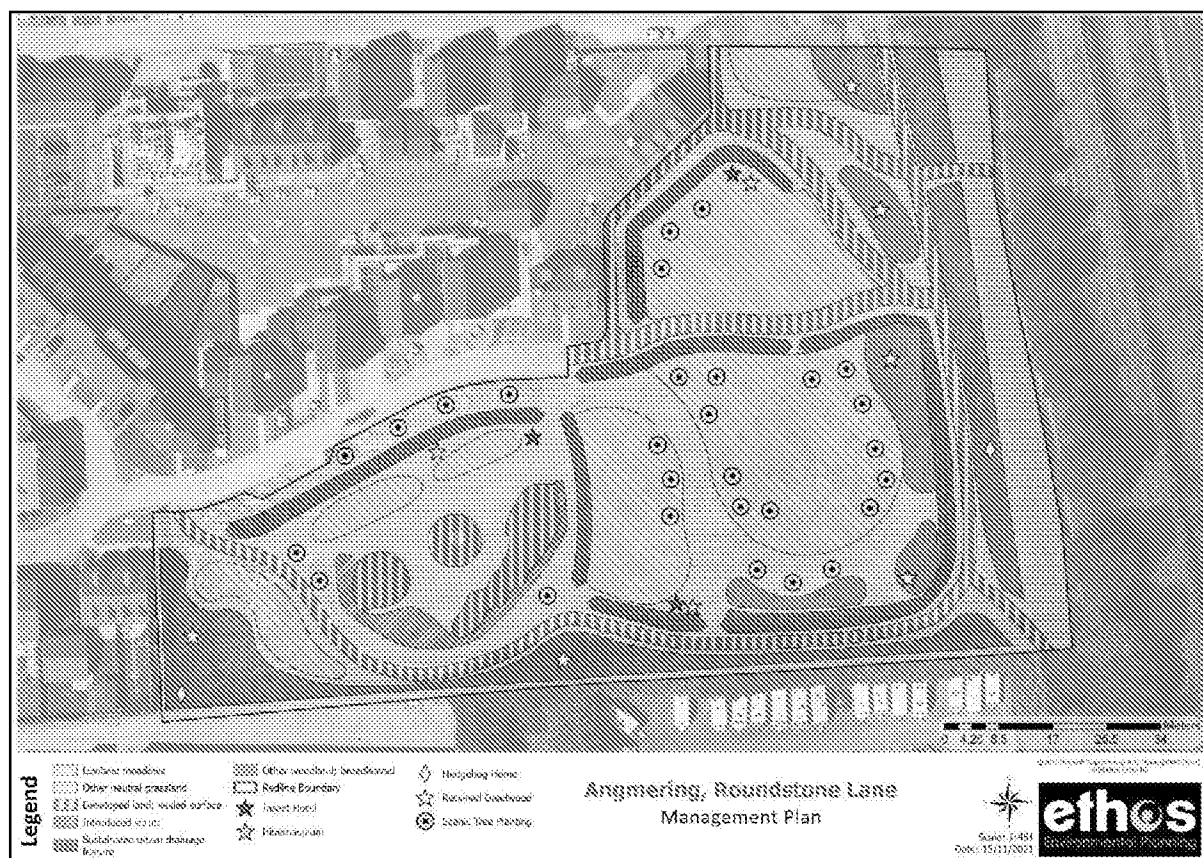
Ecological Evaluation

The proposals have been informed and designed with ecology as the focus and once completed, will enhance the site creating additional opportunities for a range of protected species. The proposals include the creation of a variety of high quality habitats including; fast growing, woody planting along the eastern and southern boundary to provide sufficient screening, ornamental shrub planting sporadically located within the open space, a variety of grassland with a varied composition of seed mixtures and a network of sustainable urban drainages swales to aid drainage.

As identified within the statement provided by Cala, the creation of an attenuation pond is no longer feasible and therefore alternative designs have been developed. The attenuation pond was not part of any targeted mitigation for protected species such as GCN and therefore its loss to the scheme was determined to not be detrimental to biodiversity. An alternative scheme has been produced in coalition with Ethos Environmental Planning and a network of swales have been proposed as an alternative to the attenuation basin. The swales will provide similar opportunities to the attenuation basin resulting in a larger surface area of marginal vegetation which was assessed as being of high ecological value. In addition, provisions for hedgehog, invertebrates, reptiles and amphibians are to be incorporated into the amended proposals. Overall, it was assessed that the amended proposals would not have any reduced ecological value to the previously approved scheme.

Figure 1 shows the revised proposals and habitats that will be created (using UKHabs classifications) and locations of species-specific provisions

Figure 1: Management Plan and ecological enhancement measures



Screen Planting and Woodland

Screen planting and woodland will be planted predominantly along the eastern boundary with small islands planted throughout the open space. The management prescription is given below;

Ground preparation and planting

- The woodland will be created with a native species rich mix of bareroot trees of local provenance.
- Trees will be planted at 2.5m spacing;
- The ground will be prepared before planting. This should include; removing vegetation by mowing or ploughing and breaking up compact soils by scarifying the ground;
- Tree planting will be undertaken between October – March; and
- Tree tubes should be used where necessary to protect against grazing stock, deer, rabbits etc.

On-going rotational management

- Ground vegetation will be kept to a minimum to prevent vigorous grasses and scrub outcompeting the structure planting (whips). This will include an annual cut with a strimmer in the autumn (September/ October) and the semi-mature trees will be mulched in the winter (January/ February);
- Ties, guards, and stakes will be checked annually and replaced/removed if tight or damaged;
- The trees will be checked every month for the first year until the summer to ensure that they are watered and in a good condition;
- The woodland areas will be thinned out on a five-year basis, which will be undertaken on rotation (split between boundary woodland belts and island parcels) to ensure that the canopy does not become closed and light penetrates the woodland floor;
- Woodland work will be undertaken in the winter and outside of the bird breeding season (March-August inclusive). Selections of woody arising will be retained to create log and brush piles in the woodland areas for wildlife (see section on species provisions).

Meadow Grassland

The grassland section within the south east of the site will be sown with Emorsgate EM2 or similar. This meadow mixture contains species that are characteristic of traditional meadows and are effective across a range of soil type. The grassland will be managed in a way that promotes a transition of layers within the grassland with some of the grassland maintained to a shorter sward and islands of the grassland managed to create stands of wildflowers. Management prescription is given below:

- The existing grassland will be scarified to provide a seed bed with 50% grassland to 50% exposed soil;
- A meadow mixture such as Emorsgate Seeds EM2 will be sown (Spring or autumn) as shown on the management plan;
- Mow regularly during the first year of establishment;
- Once established, the grassland should be cut after the main flowering period (July - August) and then mown short through the autumn and early spring; and,
- Any arisings should be removed and composted within a designated area on site.
- The grassland islands will be bi-annually cut (rotational basis) to allows some grass to be left uncut to overwinter each year;
- Perennial weeds such as docks should be removed by digging, avoiding use of herbicides;

- No fertilizers will be used as this encourages growth of vigous species and decrease the diversity of wildflowers;
- Any arisings should be removed from site or composted within a designated area on site

Amenity Grassland

All proposed areas of amenity grassland area will be down with Emorsgate Seeds EL1 (or similar), which contains slow growing grasses with a selection of wildflowers that respond well to regular short mowing. The following management prescription is recommended:

- Following removal of any weeds, prepare seed bed with firm level surface;
- Surface sow seeds and mow regularly during the first growing season to repress any weed growth – every 7-10 days during the growth season;
- Cut to 40-60mm to develop a good sward structure and balance of faster growing grasses and slower developing wild flowers;
- Once grassland is established mow regularly to 25-40mm.

Sustainable Urban Drainages Systems (SUD's)

Effective sustainable drainage schemes are those that incorporate a variety of habitats and designs that are beneficial for both water management and wildlife. Therefore, the proposed SuDS will be created with biodiversity in mind. The following recommendations are made:

- Proposed drainage solutions will have gently sloping banks and undulating surfaces which allow wildlife to enter and exit the water easily as well as creating varying depths suitable for a range of aquatic life;
 - A mosaic of habitats will be created around the edges of proposed SuDS and swales. These will include sowing of wildflower seed mixes suitable for pond edges (such as Emorsgate Seeds EP1f – Pond Edge Mixture) and creation of log and habitat piles.
 - SUDs will either be left to colonise naturally with local plant species, or else be planted with native pond species appropriate to the local area, soil and hydrology. Plants will be bought from a reputable supplier to reduce the risk of introducing invasive species;
 - The spoil from the excavation of the SUDs and swales will be used to vary ground levels and create banks which enhance the structural diversity of habitats on site. This in turn would create habitats for invertebrates, reptiles, amphibians and other faunal species
 - The mix will be sown on the ground prone to winter flooding either in spring or summer once the land has drained;
 - The areas of this grassland will be managed to maintain good variation in structure by cutting sections on a 2 – 3-year basis;
 - Works will be undertaken to minimise the effects on wildlife (September – November)
- Any arisings will be removed or composted within a designated area on site.

Introduced Planting

The street scene will comprise of a range of ornamental shrub planting. Species will comprise of a range of species including but not limited to; red chief (*Berberis thusnbergi*), Silver pink (*Cistus*), Sibirica (*Cornus alba*), Silver Queen (*Eunymous fortuneii*), Blue Clouds (*hebe*) and Fire Light (*Spirea japonica*). These shrubs will provide food source for invertebrates, and in turn, other wildlife such as birds and bats.

Scenic tree planting

A variety of scenic trees will be planted throughout the open grassland. Species will include apple, cherry, plum, pear, quince. Other shrubs and trees planted within open areas to enhance the street scene are given in the table 1 below.

Table 1: Suitable shrub species

Common name	Botanical name
Field maple	<i>(Acer campestre)</i>
Spindle	<i>(Euonymus europaeus)</i>
Dogwood	<i>(Cornus sanguinea)</i>
Wild privet	<i>(Ligustrum ovalifolium)</i>
Burnet rose	<i>(Rosa pimpinellifolia)</i>
Broom	<i>(Cytisus coparius)</i>
Rowan	<i>(Sorbus aucuparia)</i>

Species Provisions and Habitat Management

Species provisions will be incorporated into the updated proposals as shown in figure 1 and detailed in table 2.

Reptiles

- The habitat mosaic of woodland, meadow grassland and swales will provide areas suitable for foraging, shelter and hibernation;
- Rotational meadow cuts will provide a varied sward structure and open areas for reptiles to bask;
- Dedicated hibernacula will be created; the design specification is provided in figure 2. Grassland margins around the hibernacula will be left uncut to leave a long sward;
- Log and brash piles will be created in the woodland areas from selections of suitable woody arisings from the 5-year thinning regime.

Hedgehogs

- Two hedgehog homes will be provided positioned in the woodland areas with suitable cover. This area is not being fenced, so will be permeable for hedgehogs (and other wildlife) to the wider landscape habitat.
- A selection of suitable woody materials arising from woodland area management will be retained on site to create log piles as additional areas of refuge for hedgehog and other wildlife.

Invertebrates

- Three invertebrate hotels (free standing fixed to posts) will be positioned in proximity to the hibernacula and swales.

Table 2: Species Provisions

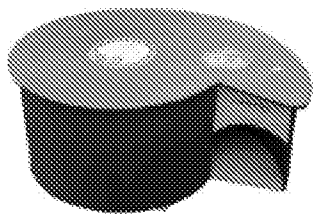
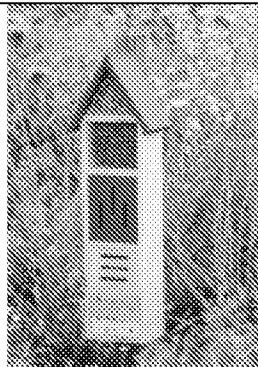
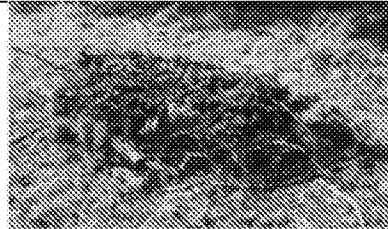
Provision	No.	Description	Installation
 Hoglio Hedgehog Home	2	• 50 x 39 x 23 cm • Weight 3.85kg • 12.5 cm entrance tunnel Recycled agricultural plastic on a plywood skeleton to withstand crushing or strimming. Swivel lid for easy access and overhanging porch.	Place within an area of low vegetation and scrub.
 Insect tower	3	• Insect tower with segregated sections suitable for a variety of invertebrates • 21 x 12.5 x 65 cm • Weight 3kg.	Position (fixed to a post) in proximity to the dedicated hibernaculum.
 Hibernacula	3	• Refuge made from logs, branches, rocks and rubble • Dig hole (if free-draining) or create covered pile (if on wetter soil) • Construct with small gaps for access and cover with soil.	Refer to figure 2 for hibernaculum design.

Figure 2: Hibernacula Design

