



**Restoration Concept**  
 Site Restoration is focused on habitat creation along peripheral slopes incorporating species rich grassland, sand martin habitat and woodland with reinstatement to agricultural grazing land within the former quarry floor.

Slooper slopes would accommodate replacement sand martin habitat species rich grassland and native woodland/ scrub.

Post-extraction, areas would be prepared through cross ripped and harrowing to establish free drainage. These operation would be followed by light filling prior to grass seeding as illustrated.

**Proposed Management of Woodland Planting - Years 1-5**

Maintain shrub & woodland areas in a weed free condition  
 Prune minor damage back to healthy wood and check for and treat disease.  
 Gap up to replace damaged or failed plant material in accordance with the original planting specification, which shall form part of the management documentation. Check protective fencing, where used, and maintain in good condition. As canopies merge into years 4-5, remove guards and stakes and cease weed control. Thin out weakest specimens if planting becomes overcrowded and start to restrict growth.  
 At the end of this period determine if thinned to 5 m to maintain continued grassland cover beneath. Felled trees to be used to create hibernacula.

**Proposed Grasslands**

**Preparation**  
 Ground preparation should follow the supplier's instructions with the removal of weeds, rubbish and stones of over 75mm diameter. The seed will be sown following extraction activities during times of sufficient warmth and moisture, ideally in late spring or early autumn.

**First year management**  
 Most of the sown meadow species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth is easily controlled by topping or mowing. (No herbicide applied on site)

Avoid cutting in the spring and early summer if the mixture is autumn sown and contains Yellow Rattle, or if the mixture has been sown with a nurse of cornfield annuals. These sown annuals should be allowed to flower, then in mid-summer cut and remove the vegetation. It is important to cut back the annuals before they die back, set seed and collapse; this will reveal the developing meadow mixture and give it the space it needs to develop.

**Management once established**  
 In the second and subsequent years sown areas can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland.  
 On shallow soils one or two cuts in the summer, or occasional light grazing, may be all that is required to maintain diversity and interest.  
 On deeper soils best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing or grazing. Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower.  
 Refinement of options would tailor by the project and form part of future management plans.  
 After flowering in July or August take a 'hay cut', cut back with a scythe, petrol trimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days before remove from site.  
 Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

**H1 LIVESTOCK HEDGEROW MIX**

Code	%	SPECIES	COMMON	SIZE	GROWN	HEIGHT/TRANSPL	DENSITY
Cr	75	Crataegus monogyna	Hawthorn	40-60cm	BR	1 + 1 Branched	5 per lin m
Ca	5	Corylus avellana	Hazel	40-60cm	BR	1 + 1 Branched	1 per lin m random selection & distribution (See Detail)
Psp	5	Prunus spinosa	Blackthorn	40-60cm	BR	1 + 1 Branched	
Ia	5	Ilex aquifolium	Holly	40-60cm	BR	1 + 1 Branched	
Sc	5	Salix caprea	Goat Willow	40-60cm	BR	1 + 1 Branched	
Vo	5	Viburnum opulus	Guelder Rose	40-60cm	BR	1 + 1 Branched	

**G1 TRADITIONAL GRAZING PASTURE MIX (Applied to Quarry Floor Post Restoration)**

Contains a selection of grasses and clovers which complement each other to produce a productive sward. May not be as high yielding as modern ryegrass leys but is more stable & dependable over a range of soil and weather conditions, with less need for inputs of fertiliser and chemicals. It is ideally suited to low input extensive grazing systems.

Grasses 95%

%	Latin name	Common name
12	Cynosurus cristatus	Crested Dogstail
9	Dactylis glomerata	Cocksfoot
12	Festuca rubra	Strong creeping Red-fescue
35	Lolium perenne	Perennial Ryegrass
6	Phleum bertolonii	Smaller Cat's-tail
9	Poa pratensis	Smooth-stalked Meadow-grass
12	Schedonorus pratensis	Meadow Fescue

Clovers, legumes and herbs 5%

%	Latin name	Common name
3	Trifolium pratense	Red Clover (Ag)
2	Trifolium repens	Small Leaved White Clover (Ag)

**Pollinators / Small Mammals**

**Birds**

Variety of proposed landcover (incl acid grassland, woodland, hazel copse, & wetland) offer habitats to sustain diverse populations of insect, mollusc, small mammals and birds.

NOTE:  
 No herbicides or pesticides to be permitted during the establishment or extractive operational stage or after operations have ceased & restoration established.

**Larger Mammals**

**Amphibians**

With positive landcover conditions to promote a healthy insect, small bird and mammal population, combined with a balance of woodland, acid grassland and meadow habitat, larger native mammal such as hare, hedgehog, badger & fox will be encouraged.

Smooth newts and frog populations are present in the area. The post restoration proposal will include wetland & new ponds for newts and other amphibians.