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BILSTHORPE COLLIERY

PITHEAD RESTORATION PROPOSALS

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BILSTHORPE COLLIERY
PITHEAD RESTORATION PROPOSALS

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DRAWINGS

2007.6 Rev. B Restoration Proposals

1. INTRODUCTION

1.1 The pithead restoration proposals for Bilsthorpe Colliery, described in this report and illustrated on drawing no. 2007.6 Rev. B are submitted in accordance with the requirements of Part 20 of the Town and Country Planning (General Permitted Development) Order 1995.

1.2 The restoration scheme is necessary under Class A of the Order because RJB Mining (UK) Ltd., as a licensee of the Coal Authority, propose to continue to work underground coal at the colliery, at which mining commenced before 1 July 1948.

1.3 In these circumstances, and where there is no approved restoration scheme, the Order requires an application for a restoration scheme to be submitted before 31 December 1995 for approval by the mineral planning authority unless agreed otherwise.

1.4 The approval of the mineral planning authority is hereby sought, in accordance with the above mentioned Order.

2. STRUCTURES

2.1 All existing buildings and structures will be demolished unless an alternative use is identified prior to demolition taking place.

2.2 All hazardous materials and scrap metals would be taken off site and dealt with in accordance with waste disposal regulations.

2.3 Remaining brick and concrete rubble could be dealt with in a number of ways:-

a) used as shaft filling material, subject to agreement with the NRA;

b) used for engineering purposes in tip construction, for example lagoon overcapping, drainage, road and footpath construction;

c) crushed for resale or stockpiled on site for use in future developments;

d) removed from site, in accordance with waste disposal regulations.

2.4 Mine shafts would be treated and capped in accordance with statutory requirements.

3. PROPOSED DEVELOPMENT AREA

3.1 The proposed development area shown on the plan measures some 7 hectares but could be altered to suit particular development requirements.

3.2 The development area avoids the mine shafts.

3.3 Interim restoration of the development area would include the removal of existing buildings to ground level and filling of voids. Remaining hardstanding, roadway access and major service connections (electricity, drainage, water, telecom) would be retained. The existing rail link would also be retained until the type and extent of redevelopment of the site is fully defined.

3.4 Should a development scheme not be agreed within the 5 year period following mine abandonment (i.e. filling of shafts) the development area would be returned to green end use as described in section 5. Services would be disconnected, the rail link would be removed and areas of hardstanding would be either punctured or removed depending on surface drainage requirements and as agreed with the planning authority, prior to capping with soils.

4. SURFACE WATER DRAINAGE

4.1 Surface water drainage would follow existing arrangements, utilising the culverted outfall to the east of site. As a means of providing a storm water balancing facility and generating fill and soils for the creation of mounds and use in restoration, a large pond, or depression, is shown on the site of the coal stocking area. This feature could, possibly, be developed into a permanent waterbody, providing an attractive setting to development. The pond could link into the existing system of brick settling ponds, which could be partially infilled and retained as a linear reed bed, improving the quality of surface water run off from the mine head area.

4.2 Pond edges would be constructed to shallow gradients in the interests of public safety and to maximise potential ecological value.

5. RESTORATION TREATMENT

General

5.1 All land outside the development area would be treated in a similar way to the tip, being restored to a mixture of wildflower grassland and woodland planting, providing an attractive outlook and setting for development or other proposed end use. Restoration proposals have been designed to integrate with proposals for restoration of adjacent tip areas.

Existing Vegetation

5.2 Of the pockets of existing vegetation cover within the pithead area, the groups of mature trees adjacent to the main offices would be retained, subject to the requirements of any future development proposals. All other areas of vegetation would be removed.

Soils

5.3 Any surplus soils from restoration of adjacent tip areas, and soils generated by the excavation of the balancing pond would be used to create an appropriate soil profile for vegetation establishment. Where possible areas of hardstanding would be removed back to original underlying soils. After suitable cultivation, vegetation would then be established directly into exposed soils.

5.4 Sufficient soils/soil making material would also be excavated from the balancing pond area to allow capping of the development area to 200-300 mm depth prior to seeding to low nutrient wildflower grassland, should development not proceed. These soils would be stored in shallow mounds (as shown on the restoration plan) and seeded to wildflower grassland. The mounds would remain as a permanent restoration feature should future development proceed.

Establishment of Amenity Grassland

5.5 Proposed grass areas would be cultivated to produce a fine tilth for seeding. After seeding, grass areas would be lightly rolled with an approved type ringed roler to stabilise the soil surface and ensure soil contact with seed. Stones in excess of 100mm diameter would be picked from seeded areas and used to form local features/stockpiles in adjacent planted areas.

5.6 In keeping with the aim of producing a low nutrient substrate, beneficial for wildflower establishment, a nitrogen only fertiliser would normally be applied at the rate of 2.5 grams per square metre in amenity grassland areas. The actual rate of fertiliser application would be determined after analysis of spread soils. Sowing rates would range between 4-6 grams per square metre rising to 30 grams per square metre along ditch hedges and on localised steeper slopes. Species mix composition (subject to analysis of spread soils would be as follows:

	% by weight		
Festuca rubra	35	Leucanthemum vulgare	2
Cynosurus cristatus	10	Prunella vulgaris	2
Agrostis capillaris	30	Lathyrus pratensis	2
Anthoxanthum odoratum	15		
Lotus corniculatus	2		
Centaurea nigra	2		

(All seed to be of British origin. Nomenclature follows Stace (1991) New Flora of the British Isles, CUP.)

5.7 Should the development area not be used for development purposes, it would be sown with the above amenity mix after spreading of soils as previously described.

Establishment of Tree and Shrub Areas

5.8 Tree and shrub species would be planted directly into previously spread subsoil or existing exposed soils, with the addition of 2 litres of mushroom compost and 30 grams of approved type slow release fertiliser per planting station. It is not proposed to undersow planting areas with a non-competitive seed mix except on steeper slopes (1:3 or greater) where surface erosion may occur.

5.9 Proposed planting mixes would be as follows:

Woodland Mix **(planted at a density of 3500no. plants per hectare)**

	%
Betula pendula	15
Salix caprea	10
Fraxinus excelsior	20
Crataegus monogyna	10
Corylus avellana	10
Quercus robur	20
Ilex aquifolium	5
Prunus avium	5
Acer campestre	5

Edge Mix **(planted at a density of 5000no. plants per hectare)**

	%
Corylus avellana	10
Crataegus monogyna	15
Salix caprea	10
Acer campestre	10
Betula pendula	10
Prunus spinosa	10

Rosa canina	10
Ilex aquifolium	5
Populus tremula	5
Prunus avium	5
Ligustrum vulgare	10

Waterside Mix **(planted at a density of 4500no. plants per hectare)**

	%		
Alnus glutinosa	30	Corylus avellana	5
Betula pubescens	30	Salix fragilis	15
Salix cinerea	15		
Viburnum opulus	5		

5.10 In addition to the above basic planting mixes localised variations in planting density and species concentration would also be created, for example by increasing the quantity of shrub species alongside footpaths/waterbodies. Within the edge mix zone, and some areas of amenity grassland additional localised seeding of *Ulex europaeus* (gorse) and *Cytisus scoparius* (broom) would be carried out. Individual pockets and stands of tree species shown in Table 1, but not included in the main planting mixes, would also be planted to provide further localised variation and interest. Detailed planting plans would be prepared and agreed with the planning authority prior to planting.

5.11 All planting areas would be enclosed with rabbit/hare proof fencing during the initial establishment period.

TABLE 1

PROPOSED TREE AND SHRUB SPECIES

COMMON NAME	BOTANICAL NAME	SIZE (CM)	TYPE
Alder	*Alnus glutinosa*	60-90	BR
Field Maple	*Acer campestre*	45-60	BR
Silver Birch	*Betula pendula*	40-60	CG
Downy Birch	*Betula pubescens*	40-60	CG
Hazel	*Corylus avellana*	60-90	BR
Hawthorn	*Crataegus monogyna*	30-45	BR
Holly	*Ilex aquifolium*	30-45	C (1L)
Ash	*Fraxinus excelsior*	45-60	BR
Aspen	*Populus tremula*	60-90	BR
Wild Cherry	*Prunus avium*	60-90	BR
Blackthorn	*Prunus spinosa*	30-45	BR
Pedunculate Oak	*Quercus robur*	40-60	CG
Dog Rose	*Rosa canina*	60-90	BR
Goat Willow	*Salix caprea*	60-90	BR
Grey Willow	*Salix cinerea*	60-90	BR
Rowan	*Sorbus aucuparia*	60-90	BR
Guelder- Rose	*Viburnum opulus*	60-90	BR

Notes:

1. BR denotes bareroot stock.
2. CG denotes cell grown stock (175cl size).
3. C denotes container grown stock (L = pot size in litres).

(Plant nomenclature follows Stace, 1991)

Establishment of Aquatic Areas

5.12 Mud and plants from ponds in the locality of the site, or from other nearby colliery sites, would be used to inoculate pond areas. This method would ensure that the natural plant composition of local ponds is reflected in new ponds and would also enable colonisation by aquatic invertebrates. Planting of the aquatic species shown in Table 2 would also be carried out across a 3 metre wide band along 20% of pond margins. The species list is restricted to common native species which will give an immediate effect before the local colonists have established. Average planting density would be 2 per square metre.

TABLE 2

PROPOSED AQUATIC SPECIES TO BE PLANTED

COMMON NAME	BOTANICAL NAME	TYPE
Common Reed	*Phragmites australis*	9cm POT
Bulrush	*Typha latifolia*	9cm POT
Branched bur-reed	*Sparganium erectum*	9cm POT
Yellow iris	*Iris pseudacorus*	9cm POT
Water mint	*Mentha aquatica*	9cm POT
Water plantain	*Alisma plantago-aquatica*	9cm POT
Marsh-marigold	*Caltha palustris*	9cm POT

(Nomenclature follows Stace, 1991)

Establishment Maintenance and Replacement Guarantee

5.13 A five year post restoration maintenance and establishment period would be provided to all areas.

5.14 A 900mm diameter weed and grass free zone would be maintained around all tree and shrub species for a period of three years after planting or until reasonable canopy closure/shading occurs, whichever is the later. After this period colonisation by ground flora would be encouraged.

5.15 Newly sown amenity grassland areas would be cut regularly during the first year after sowing depending on establishment and growth rate. Arisings would be removed. After this cut selected areas would be mown annually or grazed during early summer. Remaining amenity areas would receive no further 'positive' management other than being subject to natural pressures

such as rabbit grazing.

5.16 During the five year establishment period all failed trees and shrubs would be replaced and all grass areas reseeded as necessary to achieve the proposed scheme.