

# **DERBYSHIRE AND DERBY MINERALS LOCAL PLAN**

## **Towards a Minerals Local Plan: Spring 2018 Consultation**

### **CHAPTER 12**

#### **12.1 Restoration**

**December 2017**

## **Introduction**

- 12.1.1 Mineral workings can have a substantial impact on the landscape and the uses of land. Although the extraction process is a temporary use of land, the impacts can be long-term or even permanent. It is important, when mineral working ceases, that the area affected is restored to a beneficial after-use for the local community at the earliest opportunity and is then maintained to a high standard for a period of time until it is established sufficiently to a stage where it can be maintained by more established, less intensive methods. Effective restoration and long-term aftercare of mineral sites is integral to all proposals for mineral extraction in Derbyshire and Derby.
- 12.1.2 There are opportunities for habitat creation during the life of a quarry, through phased restoration, compensation and mitigation, and moreover, at the end of their working life, all sites should be restored to an appropriate and beneficial after-use, which presents particular opportunities for green infrastructure and recreation.
- 12.1.3 Well considered restoration schemes should be sympathetic to and have regard to the wider context of the site, helping to ensure that the restored site integrates with the character of the surrounding landscape, mitigates any visual intrusion, enhances biodiversity, improves the appearance of the area and provides benefits to the local community. The potential contribution of restored mineral workings to the UK Biodiversity Action Plan (BAP) targets is considerable.
- 12.1.4 Improvement to habitats and biodiversity may allow for the creation of green corridors which can help to link important habitats, whilst also playing a role in mitigating and adapting to climate change. Measures to mitigate and adapt to the impacts of climate change should be incorporated into mineral restoration schemes wherever possible.

## **Vision and Objectives**

- 12.1.5 The Vision will help to define the direction of the Plan by stating where we want to be in terms of mineral development by the end of the Plan period. It will set out what the Plan area will be like in terms of mineral development in 2030 if the policies and proposals of the Plan have been delivered successfully over the Plan period. The Objectives will set out how the Vision will be delivered and implemented.
- 12.1.6 The policies in this chapter will help to deliver the following objectives of the Plan:

### **Objective 5 – Minimising Impacts on Communities**

The Plan will minimise the potential adverse impacts of minerals development on local communities in the area by protecting their existing amenity, quality of life, social fabric and health.

### **Objective 6 – Protecting the Natural and Built Environment**

The Plan will conserve and enhance the area's natural and built environment, including its distinctive landscapes, habitats, wildlife and other important features by avoiding, minimising and mitigating potential adverse impacts of minerals developments.

### **Objective 8 – Minimising Flood Risk and Climate Change**

The Plan will seek to minimise and mitigate the risk of flooding and the impacts of climate change arising from minerals developments. This will include securing appropriate forms of restoration which address how sites interact with their surroundings in the longer term.

## **Evidence Base**

### **The National Planning Policy Framework (NPPF)**

- 12.1.7 This sets out that policies should be included in minerals local plans to ensure that worked land is reclaimed at the earliest opportunity, taking account of aviation safety, and that high quality restoration and aftercare of mineral sites takes place, including for agriculture (safeguarding the long-term potential of best and most versatile agricultural land and conserving soil resources), geodiversity, biodiversity, native woodland, the historic environment and recreation.
- 12.1.8 The NPPF also advises that the planning system should protect and enhance our valued landscapes and the natural environment by minimising impacts on biodiversity and providing net gains in biodiversity, contributing to the Government's commitment to halt the overall decline in biodiversity (para 109), and that planning policies should promote the preservation, restoration and re-creation of priority habitats at a landscape scale (para 117). When determining applications, planning authorities should encourage opportunities to incorporate biodiversity (para 118).

### **National Planning Practice Guidance (NPPG)**

- 12.1.9 This sets out that responsibility for the restoration and aftercare of mineral sites, including financial responsibility, lies with the minerals operator and, in the case of default, with the landowner. It goes on to state that there are many potential uses of land once mineral extraction is complete. These include:
- creation of new habitats and biodiversity;
  - use for agriculture;
  - forestry;
  - recreational activities;
  - waste management, including waste storage; and

- the built environment, such as residential, industrial or retail, where appropriate.

12.1.10 Some former mineral sites may also be restored as a landfill facility using suitable imported waste materials as an intermediate stage in restoration, prior to the site being restored fully to an appropriate after-use.

12.1.11 Paragraph 38 of the NPPG highlights a number of key stages involved in the restoration and aftercare of mineral sites.

- Stripping of soils and soil-making material and either their storage or their direct replacement (i.e. restoration) on another part of the site;
- Storage and replacement of overburden;
- Achieving landscape and landform objectives for the site, including filling operations if required, following mineral extraction;
- Restoration, including soil placement, relief of compaction and provision of surface features;
- Aftercare to ensure that following restoration the land is brought up to the required standard for its intended after use.

12.1.12 Paragraph 40 of the NPPG sets out the level of detail that should be submitted on restoration and aftercare at the planning application stage. To some extent it will depend on the individual circumstances at each site including the expected duration of operations. The information must be able to demonstrate that the overall objectives of the restoration scheme are practically achievable and it would normally include:

- an overall restoration strategy, identifying the proposed after use of the site;
- information about soil resources and hydrology, and how the topsoil/subsoil/overburden/soil making materials are to be handled whilst extraction is taking place;

- where land is agricultural land, an assessment of the agricultural land classification grade; and
- a landscape strategy.

### **The 1995 Environment Act**

- 12.1.13 This gave Mineral Planning Authorities the opportunity to review existing mineral extraction planning conditions for long established mineral sites and to modify them to reflect modern aspirations and current policy.
- 12.1.14 When the Mineral Planning Authority considers that a review is necessary, it will take the opportunity to reconsider the restoration scheme for the site, for example, by improving public rights of way, biodiversity enhancements, creation of farmland, etc. Where land is to be used for biodiversity enhancements, it is appropriate that habitat development reflects and respects the surrounding landscape.

### **The Government's Natural Environment White Paper (2011)**

- 12.1.15 This places the value of nature at the heart of the planning system, ensuring that the environment is enhanced and considered alongside economic growth and social wellbeing.

### **Consultations Undertaken and Comments Received**

- 12.1.16 The development of the new Minerals Local Plan has included a series of consultations to ascertain the views of relevant local authorities, organisations and bodies with an interest in mineral development and the potential implications of mineral development and the people of Derbyshire and their representatives.

### **Stakeholder Workshop 2009**

- 12.1.17 In July 2009, Derbyshire County and Derby City Councils held a workshop for key stakeholders. This helped to identify the key issues and themes that people thought the new Minerals Local Plan should address and sought the

input of stakeholders in developing the Vision and Objectives for the Plan. The outcomes of the workshop were published on the Council's website and in a newsletter that was circulated to stakeholders. Restoration was highlighted as a key issue which the Plan should seek to address. The idea of a specific restoration strategy for the Trent Valley was also suggested at this stage.

### **Issues and Options 2010**

- 12.1.18 At the Issues and Options stage in 2010, two issues were presented relating to the restoration of mineral workings. These were for a proposed long-term strategy for the restoration of sand and gravel sites in the Trent Valley and a similar proposal for the series of limestone quarries along the A515 corridor in Buxton. There was overall support for the preparation of these two strategies. 65% of responses at this stage supported the development of these strategies. Support continued to be expressed for the Trent Valley Strategy at the Sand and Gravel Drop-in Sessions in late 2012.

### **Drop-in Sessions 2012**

- 12.1.19 In late 2012, through a series of sand and gravel drop-in sessions, which were held with communities in the river valleys, the local communities continued to express their support for the development of a restoration strategy and to offer comments on how this should be developed.

### **Towards a Minerals Local Plan – Rolling Consultation 2015/2016**

- 12.1.20 The draft proposals set out in the Issues and Options exercise were prepared prior to the introduction of significant changes in international and national planning policy, notably the publication of the National Planning Policy Framework. Other emerging local policies and strategies and new evidence base were also considered to be important factors that should be taken into account in the formulation of the vision, objectives and policies for the new Plan, including the approach of the Plan to the restoration of mineral workings.

12.1.21 There were six responses from five organisations to this strategy paper. A summary of these is as follows:

- There was general support for the approach but with some amendments/additions put forward.
- The benefits of green infrastructure should be referred to and incorporated into the strategy.
- It should be made explicit that membership of a trade association with a restoration guarantee fund (e.g. Mineral Products Association) will negate the requirement to demonstrate that adequate financial provision is in place to fulfil restoration and aftercare requirements.
- Reference should be made to natural features which it is suggested should be incorporated into restoration schemes
- It should state that restoration plans should create net gains for biodiversity and reflect local landscape initiatives. This would ensure that should mineral extraction be proposed within the National Forest, then any restoration plans would take into account the creation of the Forest and reflect this in their proposed restoration plans through woodland planting.

### **Assessment of Comments and Outcomes for the Plan**

12.1.22 The comments have been used to inform the development of this chapter. Comments on this part of the Plan have related to minor amendments and additions to the text which have all been accepted and incorporated into the revised text.

### **Duty to Cooperate**

12.1.23 The development of a strategy for the restoration of mineral workings is considered to be a strategic issue as restored mineral sites often cover a large area and can have an impact on land in adjoining administrative areas. As a result, there is the requirement to liaise with a number of organisations in the preparation of the strategy. We have worked, and will continue to work,



closely with the mineral operators, local planning authorities and adjoining mineral planning authorities on the development of this strategy to ensure a co-ordinated approach is taken to the restoration of former mineral workings, and also with other organisations (including the Local Economic Partnership and the Local Nature Partnership and East Midlands Airport, Nature After Minerals and The Canal and River Trust) in the preparation of the strategy.

## **Sustainability Appraisal**

- 12.1.24 The Sustainability Appraisal process is a way of testing the impact of the Plan against a series of Sustainability Objectives. Where the process recommends improvements to the Plan these will be incorporated. A sustainability appraisal has been undertaken on all the Papers that constituted the Towards a

The policy ought to have a positive effect upon biodiversity in the long term by requiring enhancements as part of restoration. The same is the case for landscape and green infrastructure. The certainty of effects should be secured as there is a need to ensure adequate financial contributions to cover restoration and aftercare costs. There is potential for positive effects to communities as restoration should seek to provide community benefits. No changes required.

Minerals Local Plan Rolling consultation 2014-2017, including those concerning restoration of mineral workings.

- 12.1.25 The full appraisal is set out in the following document:

**Derbyshire and Derby Minerals Local Plan, Spring 2018 Consultation:  
Interim Sustainability Appraisal Report 2017**

## **The Proposed Approach**

12.1.26 This section includes a summary of the issues and ideas that have emerged during the process of the preparation of the Plan with regard to the restoration of mineral workings in the Plan area, and have been used to develop the emerging restoration strategy.

### **Restoration Plans and Phased Working**

12.1.27 The form of restoration and after-use of a site will depend on the type of mineral, the nature of extraction, and the availability of fill material as well as the general characteristics and local planning policies for the area. Generally, all mineral workings should be restored to an acceptable and beneficial after-use. Where long-term extraction is anticipated, phased and progressive restoration linked to phased working will be preferable in order to minimise the area of disturbance. Phased restoration allows worked land to be restored as extraction progresses in other parts of the site. It can also help to offset any impacts of the development on biodiversity, the landscape and visual amenity, as well as helping to maintain and enhance local distinctiveness during the life of the development.

12.1.28 At the planning application stage, applicants will be required to demonstrate that the site can be restored to an acceptable condition and after-use. A restoration and after-use scheme, which is integrated fully with the extraction programme from the start of the process, will be expected to be submitted as part of the planning application for the working of the site. This should provide comprehensive details of the order and timing of phases of mineral working, restoration and of the final main after-uses.

### **Landscape Character**

12.1.29 National policy seeks to protect and enhance valued landscapes. In order to implement this policy, both mineral working and restoration schemes should be informed by the landscape character of the area, ensuring that the schemes fit into, respect and connect with the surrounding landscape.

- 12.1.30 All restoration schemes should include landscaping proposals, which ensure that sites can be assimilated into the surrounding landscape and which are compatible with the proposed after-use. The Plan will continue to ensure that all mineral extraction sites are restored to beneficial after-uses which are in keeping with the landscape character of the local area.
- 12.1.31 Mineral operators and the mineral planning authority should seek to develop restoration schemes in partnership, in order to agree the most appropriate after-use of the site and how it will integrate into the surrounding area. Restoration designs should integrate with, and as far as possible, enhance the natural environment and wider landscape and should be informed by an understanding of the development of landscape over time.
- 12.1.32 Restoration and long-term aftercare schemes should include techniques that aim to work with the natural features and characteristics to manage the sources and pathways of storm and natural waters. These techniques include the restoration, enhancement and alteration of natural features and characteristics, but exclude traditional flood defence engineering that works against or disrupts these natural processes.

### **Enhancing Biodiversity**

- 12.1.33 The use of sites for mineral extraction could have a significant impact on the biodiversity interests of the site but good restoration offers a significant opportunity to recreate and even improve those interests. It could enable the establishment or re-establishment of priority habitats thus providing net gains in biodiversity, particularly through providing linkages between fragmented blocks of specific habitat types, delivering local ecological networks.
- 12.1.34 The impact of working and the standard of restoration that can be achieved would be enhanced by careful consideration of these issues in the design of mineral workings, including at both excavation and reclamation stages. Biodiversity is a very important issue and designs should therefore seek to optimise the delivery of biodiversity, balancing the benefits of extraction with the benefits associated with other services, including those associated with the intended after-use and any off-site benefits.

- 12.1.35 At the local level, the County and City Councils are signatories to the Local Biodiversity Action Plan (LBAP) that aims to aid the recovery of threatened priority habitats and species. Minerals extraction, particularly sand and gravel extraction in the Trent Valley, but also the extraction of resources in other parts of the county, could contribute significantly towards meeting these targets and add to the success of existing wetland reclamation schemes.

### **Green Infrastructure**

- 12.1.36 Areas of green open space and public rights of way are a means of using restored sites to improve not only the local environment but also the health and well-being of local residents.

### **Agricultural Land**

- 12.1.37 National policy requires that the best and most versatile (BMV) agricultural land is safeguarded i.e. it should be afforded long-term protection from development that would adversely affect the quality of the land and the yields it can produce. Where mineral extraction is considered appropriate and necessary in these areas, the soil resources should be managed and conserved throughout the period of extraction, then reinstated under appropriate conditions as part of the restoration scheme. The standard of restoration and the agricultural value of the site post restoration may be prejudiced if they are not.
- 12.1.38 It is important therefore that sites are chosen, where possible to avoid the best and most versatile resource and where this is not possible the management of soils should be an integral part of the overall design.

### **Infill**

- 12.1.39 At sites where there is a high volume of mineral extraction it may not be possible to restore the land to pre-extraction levels without the use of imported materials to make up the difference. The ability to restore land to original ground levels will impact on the options for site restoration, particularly where restoration to agricultural use is the preferred option.

- 12.1.40 Inert infill material, such as pulverised fuel ash (pfa) from coal-fired power stations and construction material (builders' rubble and soils from ground excavations) has been used to restore land to the required level, although this type of material is becoming increasingly scarce as a consequence of firstly, the run-down of the coal-fired power stations which produce pfa and, in respect of construction material, the result of increasing costs from the landfill tax as well as greater incentives to recycle materials. The location of some sites also means that the delivery of infill material by road may not be possible or could result in further and unacceptable adverse impacts.
- 12.1.41 The potential or limitations on the ability to restore ground levels should be addressed in the planning application documents and be taken into consideration in the design of the development at the earliest opportunity. Mineral operators should be able to demonstrate that sufficient infill material is likely to be available and within an acceptable period to avoid delays in restoration.

### **Flexibility and Adaptation to Climate Change**

- 12.1.42 The National Planning Policy Framework states that local all planning authorities should adopt proactive strategies to mitigate and adapt to climate change. It adds that local plans should take account of climate change over the longer term, including factors such as flood risk, coastal change, water supply and changes to biodiversity and landscape. Minerals development and the form and quality of restoration are matters which are relevant to the issue of climate change.
- 12.1.43 There are opportunities to increase resilience to climate change through the restoration of mineral operations. Restoration schemes, for example, could be tailored to contribute towards reducing the risk and scale of flooding through, for example, river braiding.
- 12.1.44 Other measures include providing opportunities for the provision of winter water storage in reclaimed quarries and ensuring that reclamation schemes take into account the effect of climate change and, where appropriate, provide

opportunities for the creation of habitat for species that are most affected by climate change.

## **Flood Risk**

- 12.1.45 The use of land for mineral extraction will affect the capacity of the site to store water at the surface and the movement of water below ground level which could increase the risk of flooding both on the site and in the surrounding area. Minerals can only be worked where they are found and some important minerals are commonly found near rivers. As set out in National Planning Practice Guidance (flood zone and flood risk tables), water compatible development within the functional floodplain includes sand and gravel workings. This means that it is appropriate for sand and gravel working to take place within areas that are considered to be at risk of flooding. It is very important therefore that the design of a mineral development, including the form of restoration, takes full account of these issues.
- 12.1.46 Well considered restoration schemes can deliver benefits that may not otherwise be possible. Restored sand and gravel workings can help to store water, diverting it from the river channel, thus reducing the risk of flooding. Opportunities to improve connectivity between the river and floodplain, such as river braiding, which increases space for flood water, can have the additional benefit of leading to the improvement of wetland habitats. Mineral operators will be required to take full account of flood risk issues in the planning application documents and the design of the site.

## **Aftercare**

- 12.1.47 In order to ensure that a restored site is fit for purpose and remains so it is important that they are properly managed afterwards. Legislation requires a period of 5 years aftercare to rehabilitate mineral sites. However in some cases, in order to achieve a beneficial after-use it may be necessary to secure an extended period of aftercare. Aftercare can include the processes of cultivating, fertilising, planting, draining and otherwise treating the land. An appropriate period of aftercare is needed to ensure mineral sites are restored

to a standard suitable for their intended after-use. The length of the aftercare period will normally be at least five years and will be negotiated on a case-by-case basis, depending on the restoration scheme and after-uses agreed for the site. Where appropriate, the Mineral Planning Authority will seek to ensure that the long-term management of the site is secured through a legal agreement.

### **Financial Guarantees**

- 12.1.48 National policy requires that financial guarantees are only provided in exceptional circumstances. Large mineral operators tend to be members of trade associations such as the Mineral Products Association which have their own Restoration Guarantee Fund (although this is limited to £1 million). However for a variety of reasons, many large mineral operators are concentrating their resources on larger sites. They are also selling or transferring smaller sites to smaller operators towards the end of the extraction phase or during the restoration phase. For these reasons, it is important to ensure that the developers or land owners left in control of the sites have adequate financial provision to fulfil the final restoration and aftercare requirements. This can be through membership of a trade association with an adequate Restoration Guarantee Fund or by providing an equivalent guarantee bond.

### **Mineral Specific Restoration**

- 12.1.49 The following section identifies those restoration issues that are associated with specific minerals.

### **Sand and Gravel**

- 12.1.50 Since the 1960s, sand and gravel extraction in the Trent Valley has led to a gradual change in the landscape, with the incremental loss of traditional water meadows and their replacement with areas of water. A strategy is being

developed as part of this Plan, to help address this issue, ensuring that a more strategic and landscape scale approach is taken to the restoration of sand and gravel workings.

12.1.51 River valley sand and gravels are relatively shallow and do not generate large quantities of overburden for use as fill material in the final restoration scheme. Inert infill material, such as pulverised fuel ash, builders' rubble and soils from ground excavations is used, where appropriate and available, to restore land levels. The drive to divert these materials from landfill in general and to increase recycling has reduced the availability of suitable infill materials and this will continue to be an issue throughout the Plan period, which could limit restoration options. The closure of coal fired power stations in the area will also reduce the amount of pulverised fuel ash that will be available in the future.

12.1.52 The shallow nature of sand and gravel workings means that opportunities to assimilate restored sites into the landscape is greater, than for example, restored hard rock quarries where extraction can be very deep into the ground.

Former sand and gravel workings can be restored to a variety of end uses. Sites can be restored to agricultural uses where sufficient infill material is available. Many restored sites provide valuable areas for nature conservation, providing important opportunities to increase biodiversity (for example by the incorporation of reed beds, wet grasslands, wet woodlands and open water areas). They also provide opportunities for formal recreation (sailing, fishing, bird watching) and informal recreation (walking, cycling and picnicking).

12.1.53 Where restoration of sites involves areas of open water and/or grassland this can result in the attraction of large numbers and species of birds that can pose a strike hazard to aircraft where the site is close to an airport. In general, large and/or flocking bird species are more likely to cause damage to an aircraft given the greater mass involved in the collision. Species such as Mute Swans and Canada Geese are known to pose the greatest risk to aircraft. A 13km safeguarding zone is delineated around airports to ensure that bird strike is taken into account when considering proposals for development in



this area. This zone is based on a statistic that 95% of bird strikes occur below 2000ft, and that an aircraft approaching an aerodrome on a normal approach would descend below 2000ft approximately 13km from the runway<sup>1</sup>. This may suggest that the majority of infill material which is available infill material should be used in the restoration of sites which lie within this safeguarding zone.

- 12.1.54 Where infill material is limited, the risk of bird strike can be reduced by adopting well-considered restoration design and habitat management principles which discourage large flocking birds from settling in these water areas. For example, steep-sided water bodies with no islands and surrounded by areas of wet woodland rather than short grass are less attractive to many of the species of flocking birds which pose the greatest risk to aircraft, but at the same time this has implications for the appearance of the restored site. A balance should be struck between competing interests, and the aim should be to maximise biodiversity benefits while managing the risk of bird strike. Some design approaches to reducing bird strike may not be conducive to a biodiversity-rich restoration, particularly for certain bird species, and so should only be used where a high risk of bird strike is demonstrated and cannot otherwise be overcome.
- 12.1.55 The councils will work closely with airport authorities and other interested bodies to ensure that sites close to airports are restored in ways which minimise the risk of bird strike. In the Plan area, these include East Midlands Airport, Derby Aerodrome near Egginton and Tatenhill Aerodrome near Burton-Upon-Trent in Staffordshire.
- 12.1.56 Where infilling is intended to be used as a means of restoring the site it is important that there is confidence that sufficient supplies of suitable material will be available so that restoration is likely to proceed broadly at the same rate as extraction and for the whole operation to be completed within a reasonable timescale.

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<sup>1</sup> CAA (2002) CAP 660 Aerodrome Bird Control

- 12.1.57 The emerging Strategy for the Trent Valley area will set out a more detailed long-term strategy for the restoration of sand and gravel workings in the Trent, Lower Derwent and Lower Dove valleys. This will be informed and supported by work which has been undertaken to identify those areas of landscape considered to be of multiple environmental sensitivity relating to ecology, historic environment and landscape attributes. It will provide guidance about how each site in the Trent, Derwent and Lower Dove valleys could be restored in the most appropriate way. It will seek to achieve a more co-ordinated and joined up approach to the way in which sites are restored. This will be supported by a Supplementary Planning Document (SPD). It is expected that this SPD will be developed once the Minerals Local Plan is adopted.

### **Crushed Rock**

- 12.1.58 The extraction of hard rock has the potential for substantial impact on the environment. The scale of the operations and the relatively small quantities of waste material involved compared to the rock which is removed means that it is not possible generally to restore land to its original levels following completion of working. This means that the configuration of the land is changed permanently, although, where the operation can be designed so as to be contained visually by the existing topography in advance of working, visual impact can be limited. Opportunities for progressive restoration are more limited, although an early start can often be made in the treatment of the quarry face or floor. Final restoration depends to a large extent on the depth of the quarry and level of the water table. In cases where the depth is not too great, the quarry floor can be restored for agriculture. Bolsover Moor Quarry is a good example of this.
- 12.1.59 Former crushed rock quarries have the potential to provide opportunities for recreational activities such as climbing and abseiling, as well as educational opportunities, for example, providing valuable areas for students to study geological formations and structures.

- 12.1.60 Natural regeneration is usually more appropriate where the quarry is deeper and many quarries can become important areas for wildlife and natural history in such cases. When informed properly by the character of the surrounding landscape, innovative restoration blasting techniques can be used to create more varied and more natural looking slope sequences consisting of rock screens, buttresses and headwalls, which can be vegetated selectively to replicate natural limestone valley sides.
- 12.1.61 A Strategy for the restoration of the carboniferous limestone quarries is being developed, which will be included in the Minerals Local Plan. This has emerged and evolved from the idea at Issues and Options stage of preparing a strategy for the four A515 Quarries. In view of the Government's policy support for the concept of landscape scale strategic restoration and taking into account support shown for the approach of having a restoration strategy for the A515 quarries, the Councils have agreed that this should be extended to encompass all hard rock quarries lying within the Carboniferous Limestone. The Strategy will set out a framework of strategic principles that would deliver a preferred pattern of restoration for all hard rock quarries within the Carboniferous Limestone area.

### **Surface Coal**

- 12.1.62 Although surface coal mining is essentially a temporary use of land, lasting anything from 18 months to 10 years, some of its effects can remain for a period after working has ceased. For example, it can take several years for a restored site, including the landscaping, to mature to a point where the site has been assimilated fully into the surrounding landscape and the footprint is no longer discernible. Poor examples of restoration of these sites in the past has increased the concern of local communities.
- 12.1.63 These negative effects can be ameliorated to some extent by careful pre-development planning and the effective monitoring of operations. The large amounts of overburden that have to be removed to access the coal means that, through sympathetic and well-managed restoration, original landforms

can be recreated or more attractive ones produced over time. Furthermore, as the volume of coal that is extracted is relatively small in comparison to the surface area, sites can often be restored to original levels.

- 12.1.64 Surface coal mining schemes often result in the loss of mature trees and hedgerows which, even when replaced, take a long time to mature. However, restoration schemes can provide important local environmental benefits that would not otherwise be achieved, including the creation of additional ecological features and wildlife habitats. For example, surface mining developments have, in the past, enabled areas of despoiled and derelict land to be reclaimed or have involved the removal of problems arising from underground workings such as subsidence and dangerous emissions of methane gas.
- 12.1.65 One particular area of concern for local communities has been the impact on drainage, particularly where clay is also extracted as part of the scheme to extract the coal. This issue will need to be addressed properly when considering future schemes.

### **Deep-Mined Coal**

- 12.1.66 The underground working of coal at major collieries creates large volumes of waste or 'spoil', the disposal of which is one of the main potential causes of environmental damage. Greater mechanisation resulted in large increases in the production of spoil, and despite the cessation of large-scale deep mine coal production in Derbyshire, the remaining spoil tips are part of the legacy of the mining industry. Some of the tips have been removed completely as part of redevelopment schemes, whilst many others have been restored and landscaped. These restoration schemes often involve re-profiling of the tips rather than complete removal but this, in combination with the landscaping, reduces the appearance of the tips and helps them to be assimilated into the surrounding area. Some of the materials which were previously placed in the tips as unwanted and unusable waste materials now have a commercial use and several tips have since been reworked to extract this previously discarded

resource, which has provided an opportunity to revisit the restoration of the landscape.

## **Building Stone**

- 12.1.67 Quarries which produce building stone usually produce relatively small amounts of stone, intermittently, over long periods of time and often regenerate naturally to some extent between periods of extraction. Final restoration of these quarries depends on the particular characteristics of the site but usually, given their often secluded countryside location, a variety of uses including agriculture, woodland and nature conservation is often most appropriate.

## **Clay**

- 12.1.68 The nature of the brick clay market raises particular issues for clay working in terms of the length of time taken to work and restore sites and in terms of the need for stockpiling. Fluctuations in the economy impact on the construction industry and the consequent demand for structural clay products especially bricks. Periods of decline may lead to the mothballing or closure of extraction and processing facilities, including brickworks, which may result in a landscape of inactivity. This presents a particular need to minimise the impact of stockpiled clay material both on the environment and local amenity.
- 12.1.69 If brick clay or fireclay is worked in association with surface coal, schemes usually require short extraction periods with quick restoration, which limits stockpiling opportunities. Brick and fireclay may be stocked at the brick works or the clay products site rather than at the excavation site.

## **Policy R1: Restoration and After-Use of Mineral Sites**

**Planning proposals for all mineral extraction schemes will have to demonstrate that, from the outset of the preparation of the application, provision has been made for the restoration and sustainable after-use of the site.**

**Proposals for minerals development will be required to show that the following principles have been taken into account:**

- 1. Restoration schemes will need to demonstrate, where applicable, that the scheme complies with any specific restoration strategy for that area, for example the Trent Valley Strategy or the Strategy for Hard Rock Quarries.**
- 2. Restoration should be sympathetic to and have regard to the wider context of the site, in terms of the character of the surrounding landscape and historic environment and existing land uses in the area.**
- 3. Schemes should, where appropriate, make provision for progressive restoration.**
- 4. Schemes should provide details of the final landform on which the restoration scheme is based and include indicative details of the drainage system and landscaping, including the retention of any existing, important landscape features.**
- 5. Where restoration will involve the use of imported materials to achieve the intended ground levels the operator will be required to demonstrate that sufficient infill materials are likely to be available to restore the site within an acceptable timescale.**
- 6. Where restoration would take account of local landscape initiatives.**
- 7. Schemes will need to indicate how soils and subsoils are to be removed, stored during the extraction operations and finally replaced, in accordance with established best practice.**

- 8. Proposals will need to demonstrate how the scheme will retain, enhance and/or replace areas of the best and most versatile agricultural land.**
- 9. Proposals will be required to demonstrate that flood risk on the site or in the surrounding area would not be increased and any opportunities to reduce flooding would be maximised.**
- 10. Where sites lie within an Airport Safeguarding Zone, the issue of bird strike and its impact on the final restoration scheme will be considered carefully.**
- 11. Where possible, proposals should seek to provide benefits to the local and wider community including enhancement and creation of biodiversity and geodiversity interests, linking of site restoration to other green infrastructure initiatives, enhanced landscape character, improved public access, recreation, education, employment or tourism opportunities.**
- 12. The restoration plan should be sufficiently flexible to accommodate changes in design needed during the lifetime of the scheme without affecting the integrity of the overall scheme, including allowing for adaptation to the effects of climate change.**
- 13. Cumulative effects associated with reclamation and long-term management should be considered at the outset of the application process, with a view to minimising impacts and optimising potential benefits.**
- 14. An appropriate period of aftercare should be agreed with the mpa to enable the site to be restored to a standard suitable for its intended after-use.**
- 15. Developers will be required to demonstrate that adequate financial provision has been made to fulfil the restoration and aftercare requirements when proposals are submitted. This can be through membership of trade association with a Restoration Guarantee Bond or by providing an equivalent guarantee bond and be secured as part of a Section 106 Legal Agreement to cover all or part of the restoration and aftercare costs.**

12.1.70 The Plan, as set out at in Chapter 3, will contain a number of objectives to be achieved over the Plan period, in order to achieve the Plan's overall Vision. The effectiveness of the Plan's policies and proposals, put in place to meet those objectives, will be monitored so that, if necessary, issues can be identified and addressed through a revision of the Plan, either in whole or part.

**Do you have any comments on the proposed approach to the restoration of mineral sites, as set out in this Chapter?**