# CAMBRIAN QUARRY, MOLD

## Planning Application for the Restoration of Cambrian Quarry by the Importation and Recycling of Inert Materials

## Outline Management Plan (OMP)

## (Final Draft)

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**Planning Authority:** Flintshire County Council (FCC)

**Grid Reference:** SJ 21464 62125 (Site Centre)

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## 1 Introduction

This 'Outline Management Plan' (OMP) has been prepared as part of a planning application to restore the existing quarry void at Cambrian Quarry, Gwernymynydd near Mold by importing and recycling inert materials. The proposed works will also include the construction of a new access track through the woodland on the site which is designated a Site of Special Scientific Interest, (SSSI).

An EcIA has been produced which has identified the important species and habitats within the site along with those which will be required to be retained/enhanced during the period of the proposed works and those which will require on-going management on completion of the in-fill operations.

## 2 Summary of proposed operations.

The infilling operations will result in the temporary loss of 2.8ha of calcareous grassland. The creation of a new internal access road for vehicles serving the development will result in the loss of a strip of woodland parallel to Glyndwr Road of 0.22ha in area. The construction of the new access will also have an impact on an entrance to older underground workings which are a known hibernation site for lesser horseshoe bats and other bat species. Two ephemeral and one permanent pond where great crested newts and other amphibians have been recorded in the void proposed for infilling will be lost as a result of the operations.

## 3 Identification of features for management.

### 3.1 Parameters of OMP

This OMP covers all land with the Cambrian Quarry site boundary which includes areas of woodland that will be unaffected by the proposals. The boundary of the OMP is shown outlined in orange on Plan No. CQ/OMP/01. The OMP covers retained habitats, habitats to be created at the start of the development and habitats that will be created post restoration.

Management of the whole OMP area, including the restored quarry void and office/weighbridge area to the north, will continue for a period of 15 years post restoration.

### 3.2 Retained Habitats

There are seven retained habitat areas which have been identified as part of the ecological impact assessment process as requiring management.

- The underground bat hibernation site.
- A building which is proposed for conversion into a potential maternity roost for the lesser horseshoe bats.
- Perimeter hedges.
- Areas of calcareous grassland which are degrading and require management.
- Broadleaved woodland areas.

- One ephemeral pond which is a breeding site for common toad, palmate & smooth newts.

- The Eastern Access Track which is to be stopped up and requires management to encourage natural regeneration.

### 3.3 Proposed Habitats

Two new habitats will be created at the start of the development as part of the proposals.

- Ponds will be created to the north east of the Quarry Void, to compensate for ponds that will be lost as a result of the infilling operations. The re-creation of this habitat is also required due to the presence of great crested newts and other amphibians in the ponds which will be lost.

- Broadleaved woodland around the south western perimeter of the quarry void.

### 3.4 Restored Habitats

Upon completion of infilling of the Quarry Void, this infilled area and the office/weighbridge area to the north will be restored to calcareous grassland. Broadleaved woodland will be planted around the perimeter of the restored Quarry Void. These Restored Habitats are shown on the Restoration Masterplan (Drawing No. ASH/CQ/09).

## 4 Management proposals

4.1 Management Objectives

The following management objectives have been identified and will be given priority due to the status of the site as a SSSI.

- The maintenance and enhancement of the favourable conservation status of the lesser horseshoe bat colony.
- The maintenance and enhancement of the great crested newt population.
- The maintenance and enhancement of the broadleaved woodland, a 'Priority BAP habitat.
- The management and restoration of the calcareous grassland, also a 'Priority BAP' habitat.
- The enhancement of biodiversity throughout the site.

### 4.2 Retained habitats.

4.2.1 The Underground Bat Hibernation Site

The bat hibernation site at Cambrian Quarry occupies the former underground workings of the old silica mines. Due to the fact that this is one of the UKs most important hibernation sites, and an integral part of the Cambrian Quarry, Gwernymynydd SSSI, certain measures are proposed to ensure that this valuable site is retained and that the proposals have no impact on the structure or its occupants.

The following measures are proposed:

- The secure grilling of two mine entrances (Entrances 1 & 2) to prevent disturbance to the bats.
- The stopping up of the Eastern Access Track at both ends to prevent vehicle movements above the underground workings.
- The licensing of the proposed new internal access road works which will impact on the Mine Entrance No.4 to ensure that a comprehensive mitigation package is in place.
- The retention of vegetation in the vicinity of the mine entrances to provide cover for emerging bats. It is however important that the vegetation does not eventually block the entrances.

4.2.2 Proposed Building Conversion

Although the underground hibernation site is of 'national' importance, the location of the maternity roost of most of the lesser horseshoe bats using the roost is not known. Due to the importance of the colony this 'unknown roost' must therefore be considered to be at risk. It is therefore proposed to convert an existing building (shown on Plan No. CQ/OMP/01) into a potential maternity roost for this species. The following features will be incorporated into the design.

- The rear wall of the building should be elevated by a minimum of 1 metre to enable a pitched roof to be constructed.
- The roof should be clad with slate and if felt is used this should be the traditional 1F bitumastic felt. The new breathable products must be avoided.
- The roof should be supported by 'rough sawn' timbers to provide perches for the bats.
- All of the windows must be permanently bricked up to create dark internal conditions.
- The door should be retained but must be secure and kept locked. Keys should be provided to the Clwyd Bat Group and/or the site ecologists so that monitoring can take place.
- A bat access point should be installed in the rear wall approximately 1m below the apex of the roof. This access should be 300mm in width and 200mm in depth.

4.2.3 Perimeter Hedges

The lesser horseshoe bat survey work carried out in 2009 (Hall & Dyer) suggested that the Bryngwyn Quarry area to the south of Cambrian Quarry could be important to lesser horseshoe bats for winter foraging. The perimeter hedges will therefore be maintained and any gaps will be planted with appropriate hedgerow and broadleaved tree species.

4.2.4 Calcareous Grassland

The two areas of calcareous grassland indicated on Plan No. CQ/OMP/01 will be taken into active management at the start of the development. This will improve the habitat for birds, butterflies and other invertebrates for the duration of the proposed infilling operations and throughout the 15 year post restoration management period. The western area in particular will require brush-cutting several times per year initially and raking to control the tree saplings which are now dominating this valuable habitat. On completion of the infilling operations and the restoration of the

quarry void to calcareous grassland, the most efficient way of managing this habitat will be to introduce an appropriate grazing regime to control scrub encroachment.

For the duration of the infilling operations, the eastern section of grassland will be fenced on its western boundary with amphibian proof fencing which will be regularly inspected and retained. Management operations in this area will take the potential presence of great crested newts and other amphibians into account. Scrub will be controlled by cutting and stump treatment where appropriate.

The giant hogweed present in the eastern section of grassland will be controlled, along with any other non-native plant species using and appropriate herbicide.

4.2.5 Broadleaved Woodland

Although largely unaffected by the proposals, the broadleaved woodland on the site will be managed from the start of the development and management will continue until the end of the 15 year post restoration management period. This will include the control and eradication of all invasive non-native (INN) plant species and other 'garden escapes' such as *Cotoneaster* and *Buddleia*.

Japanese knotweed and Himalayan balsam are both present in the woodland areas and will be treated using approved methods and herbicides.

The woodland will be inspected on an annual basis for 'Ash dieback'.

The dormouse box project initiated in 2007 will be maintained for the lifespan of the management period.

The badgers will be monitored on an annual basis.

If a grazing regime is introduced at any time to manage the calcareous grassland, the woodland will be protected from livestock by fencing.

4.2.6 Ephemeral Pond

The ephemeral pond above the quarry void is to be retained as part of the proposals and will be included within the amphibian fence. Vigorous plant species that could threaten to take over the pond, such as *Typha latifolia* which is present on the site will be controlled manually in late autumn to preserve an area of open water.

4.2.7 Eastern Access Track

The Eastern Access Track is already regenerating into calcareous grassland and this regeneration will be encouraged by the control of both scrub and INN plant species and the exclusion of vehicles and site personnel from this area.

**4.3 Proposed Habitats**

4.3.1 Ponds

A series of ponds is to be created to compensate for the loss of the water bodies in the base of the quarry void.

- The new ponds will extend to a minimum of twice the surface area of those lost.

- The ponds will be located in the approximate area shown on Plan No. CQ/OMP/01. The exact size and location will be agreed with CCW as part of the GCN licensing process.
- The ponds will be within the amphibian proof fence to discourage animals from straying into the working area.
- The ponds will be lined with clay.
- The substrate from the ponds in the Quarry Void, which will include the roots of all of the vegetation, will be transferred to the new ponds. This will give cover for spawning newts and other amphibians and ensure the transfer of the *Charophytes.*
- *Typha latifolia* from the ephemeral pond in the quarry void will not be introduced as this species can be invasive.
- If this species, or any other potentially invasive plants do colonise the new ponds, these will controlled manually by pulling in late autumn.
- If, on completion of the infilling operations, the calcareous grassland is to be managed by grazing, the ponds will be fenced to prevent damage by livestock.
- The measures detailed in the 'Biosecurity Risk Assessment' will be adhered to at all times to reduce the risk of introducing the Chytridiomycosis fungal disease to the amphibian population.

4.3.2 Broadleaved Woodland

An area of new broadleaved woodland will be planted around the south western perimeter of the Quarry Void at the start of the development and will be carried out in accordance with the following measures:

- All new broadleaved woodland planted on the site will be carried out using appropriate species and stock of local provenance.
- The trees will be protected with rabbit guards to prevent damage.
- If the trees have not reached sufficient size by the time a grazing regime is introduced post restoration, the new trees will be protected with stock proof fencing.
- The integrity of the tree line will be included in the monitoring programme and any gaps that occur will be filled with new planting.
- To reduce the risk of introducing further INN plant species and/or Sudden Oak Death; (*Phytophthora ramorum*) to the site, the measures detailed in the 'Biosecurity Risk Assessment' will be adhered to at all times.

## 4.4 Restored Habitats

On completion of the infilling operations, the infilled Quarry Void and the office/weighbridge area to the north will be restored to calcareous grassland. A belt of broadleaved woodland will be planted around the perimeter of the restored Quarry void. These areas will then be managed for a period of 15 years. Detailed management proposals for these restored habitats will be agreed with the MPA and CCW one year in advance of the completion of restoration and incorporated into the detailed Management Plan (see Section 6 below).

The calcareous grassland will be restored and managed using the following principles:

- The topsoil must be of a correct pH to ensure that an appropriate plant species assemblage develops in the long term.
- A seed mix of local provenance containing as many as possible of the species recorded during the original botanical survey will be used. It is accepted that it may not be possible to include all species. Any species absent should however re-colonise the site naturally in the ensuing years.
- Once the grassland has become established, an appropriate grazing regime will be introduced to prevent scrub encroachment which has been an on-going problem on this site.
- The perimeter woodland will be fenced to ensure that livestock do not stray into this habitat.

## 5 Monitoring

Monitoring will be an integral part of the site management to ensure that the management objectives outlined in 4.1 are being achieved. If the monitoring identifies areas in which the management proposals are not achieving the objectives, changes will be implemented. This could include changing the frequency of visits in order to monitor situations more closely. Any changes to the management proposals will be agreed in advance with the MPA and CCW.

Monitoring will initially take place on an annual basis and a monitoring report will be prepared and submitted to the MPA/CCW. If requested by the MPA/CCW an annual review meeting will be held following the issue of the monitoring report.

The monitoring will cover both the habitats undergoing management and protected species within those habitats.

## 6 Site Management Plan

A detailed Management Plan will be produced in consultation with CCW and FCC within 6 months of the grant of planning permission. The Management Plan will initially cover the management of the Retained Habitats (see Section 3.2) and the Proposed Habitats (see Section 3.3) for the period from the commencement of the development to the completion of restoration operations.

One year in advance of the completion of restoration operations, detailed proposals for the management of the Restored Habitats (see Section 3.4) for a period of 15 years will be submitted to the MPA and CCW for approval.

This Management Plan will be guided by the annual monitoring and will have the flexibility to implement changes in both management practices and objectives where necessary. The Management Plan will therefore be reviewed on an annual basis in consultation with the MPA and CCW.