CRAIG YR HESG QUARRY
Western Extension

Environmental Statement
Non Technical Summary
Volume 4

May 2015

ENVIRONMENTAL STATEMENT

NON TECHNICAL SUMMARY

VOLUME 4

CRAIG YR HESG QUARRY

Extension and Consolidation Application

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1.0 INTRODUCTION

1.1 Background

A planning application has been submitted by Hanson UK to Rhondda Cynon Taf County Borough Council (RCT) which seeks planning permission for:

(i) A north western extension of Craig yr Hesg Quarry; and

(ii) The consolidation of the current planning permissions at Craig yr Hesg Quarry into a single permission regulating quarrying, restoration and ancillary operations at the overall quarry site.

A plan illustrating the location of the Craig yr Hesg Quarry including the extension area is produced as figure 1.1.

Craig yr Hesg Quarry is a long established quarry situated on the western side of the Taff Valley, some 1km north of the built up area of Pontypridd. The Quarry is producing aggregate from a deposit of Pennant Sandstone, which has properties of skid resistance and abrasion which make it particularly suitable for road surfacing in situations where a high degree of skid resistance is needed to minimise the risk of skidding related accidents. These properties are measured as 'polished stone value' (PSV), where aggregate with a PSV of over 60 is regarded as a high skid resistant aggregate. Material with a PSV of over 65 is needed for particularly stressed sites such as certain sections of motorway, interchanges, airport runways etc.

The Pennant Sandstone at Craig Yr Hesg quarry has a PSV of +68 to 70, making it one of the highest quality sources of skid resistant surfacing aggregate not only in South Wales, but the UK. Production at the quarry over the last 10 years has averaged some 400,000 tonnes per annum, and such output volumes are anticipated to continue. The products are marketed over a relatively wide geographical area, where stone from Craig yr Hesg has been used in major highway projects in the south east of England, and more locally, the material has been used on recent projects at the Porth by-pass and the Newport southern distributor road.

However, remaining reserves of sandstone at the Quarry are now limited, and in order to provide for continuity of production and supply, the quarry owners, Hanson UK, wish to seek planning permission for a north western extension of the quarry into land currently comprising rough grassland used for grazing. The extension site is identified in the RCT Local Development Plan as a 'preferred area' for future quarrying, where the Plan acknowledges that the resources at the quarry "are in high demand" ref para 6.184). The Craig yr Hesg Quarry preferred area is the only preferred area for quarrying identified in the LDP.

The application site boundaries have been drawn to encompass the proposed extension area and existing Craig yr Hesg Quarry as part of a 'consolidation application'. This is designed to facilitate the issuing of a single planning permission, covering all extraction, restoration, processing and related operations at the Quarry.

1.2 The Application Site

As noted above, the application site boundary has been drawn to encompass the permitted area of Craig yr Hesg Quarry, and the proposed north-west extension site. The total area of the planning permission boundary of the current Craig yr Hesg Quarry is 28.27 hectares. Certain areas of the original planning permission boundary are no longer part of the quarry operational area and have been excluded from the boundary of the current application. The boundary of the current consolidation and extension application defined by a red line on plan ref CYH/E2 is 36.7 hectares in extent, of which the northern extension area comprises 11.24 hectares. Within the extension area, the net quarry extraction area defined by a dashed green lline on plan ref CYH/E2 is 5.52 hectares. The northern screening landform within the extension area, shown as B1 on plan ref CYH/E4 would occupy an area of 2.1 hectares. The total area of land currently in the control of Hanson, and defined by a blue line on plan ref CYH/E2 is 38.08 hectares.

Craig yr Hesg quarry is situated on the western side of the Taff Valley, some 1km north of the built up area of Pontypridd. The village of Glyncoch lies beyond the northern boundary of the quarry. Locally, the quarry is bounded to the north by the Glyncoch football ground and clubhouse; to

the northwest by grazing land which comprises the proposed extension area; to the west and southwest by the prominent wooded ridgeline of Coed Craig Yr Hesg, which overlooks the town of Pontypridd; and to the east by a narrow corridor of woodland between the site and the B4273 Ynysybwl Road.

The quarry processing plant in the eastern area of the site comprises a crushing and screening plant together with a recently installed replacement asphalt plant. The main quarry area lies to the west, with a series of quarry faces and benches which are being developed in a general north-westerly direction within the limits of the planning permission. Additional permitted reserves lie within land between the processing plant and main quarry void. This area currently contains stockpiles of processed fine aggregate, but following the relocation of those stocks, the area will be quarried as part of the approved development scheme.

The north west extension area comprises grazing land with some pockets and linear strips of rougher vegetation. A number of intermittent dry stone walls are present but they are generally in poor states of repair. The area rises to a gentle dome to the north west of the current quarry, and then falls gently to the east and north, with steeper slopes to the west down to Darren Ddu Road.

1.3 The Proposed Development

The overall development scheme, which is described in detail in Section 6.0 of the Planning Application Statement, and summarised in Chapter 3.0 of this NTS makes provision for:

(i) The construction of a landscaped screening landform around the eastern and northern boundaries of the extension area, prior to the commencement of extraction within the extension area;

(ii) The construction of a soil screen bund along the north western boundary of the quarry, again prior to the commencement of extraction;

(iii) The phased extraction of some 10m tonnes of Pennant Sandstone from the extension area;

(iv) The use of existing processing plant, ancillary plant and infrastructure to process the reserves from the extension area and the remaining reserves at the existing quarry; and

(v) An overall restoration scheme for the existing quarry and extension area designed to facilitate landscape amenity and nature conservation after uses.

1.4 The Non Technical Summary

An Environmental Impact Assessment (EIA) has been undertaken to consider the environmental effects of the proposed development. The results are presented in an Environmental Statement which accompanies the planning application. This document is a non technical summary (NTS) of the Environmental Statement (ES), and presents the main findings of the Environmental Impact Assessment (EIA) in non technical language. The NTS, as the title suggests, provides only a brief summarised account of a large amount of technical reports and data.

However, it is intended to provide a sufficient overview of the development scheme, and the environmental issues which would be associated with the development, to allow the reader to gain an understanding of the key issues, and the way in which the EIA has informed the preparation of the proposed development scheme.

The NTS comprises Volume 4 of a comprehensive submission which consists of:

- Volume 1: Environmental Statement (ES);
- Volume 2: Technical Appendices;
- Volume 3: Landscape and Visual Impact Assessment Figures; and
- Volume 4: Non Technical Summary of the ES (i.e. this document).

The planning application is supported by a Planning Application Statement (PAS) which includes the formal application plans which illustrate the details of the proposed development. Selected plans are reproduced in this NTS for ease of reference.

1.5 Technical Studies

As part of the EIA, technical studies have been undertaken to consider the effect of the development in terms of:

- Landscape and Visual Impact;
- Ecology;
- Soils and Agricultural Land;
- Hydrology and Hydrogeology;
- Noise;
- Blast Vibration;
- Air Quality;
- Transportation; and
- Cultural Heritage.

In addition, technical inputs on the design of the working scheme, geology and reserve assessment, have been provided by in-house expertise at Hanson.

1.6 Document Availability

The ES volumes are available for inspection at the offices of Rhondda Cynon Taf, Planning Department, Sardis House, Sardis Road, Pontypridd, CF37 1DU

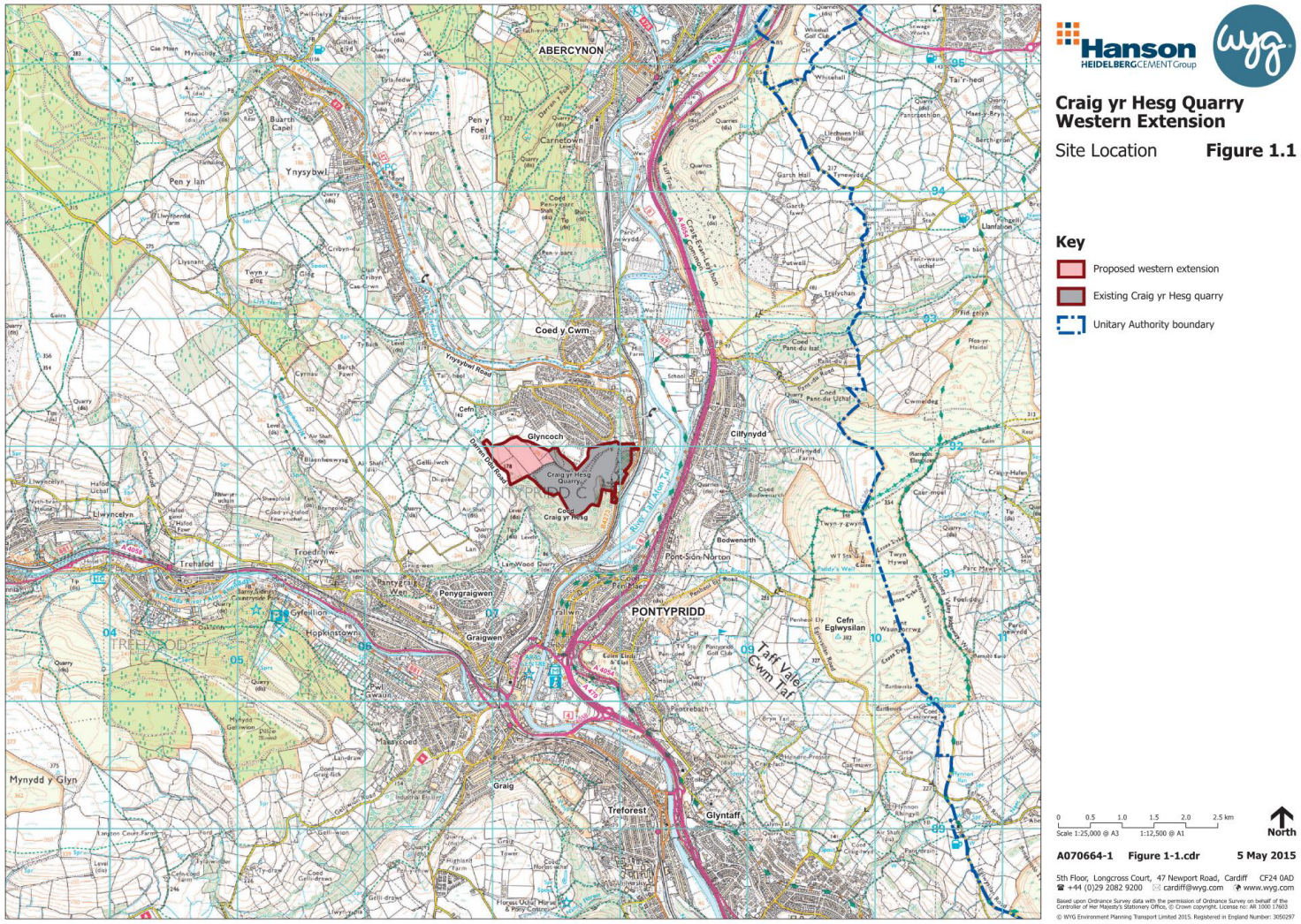
Copies may be purchased from the Applicant's Agents SLR Consulting Ltd, Fulmar House, Beignon Close, Ocean Way, Cardiff CF24 5PB (Tel 20920 491010).

The cost of volumes (inclusive of VAT and postage) is:

- ES Volumes 1 – 4 and Planning Application Statement
  Printed versions £100.00
  CD version £5.00

- Volume 4 NTS: (Printed version) £10.00

Figure 1-1 - Site Location Plan



2.0 THE PROPOSED DEVELOPMENT

2.1 Craig yr Hesg Quarry: Current Circumstances.

The quarry is being developed into the area approved in the August 1993 planning permission, and it has now reached the full lateral limits approved as part of that permission. The remaining reserves are thus largely confined to the lower levels of the quarry, and beneath existing haul roads and benches. The approximate total reserve remaining to be worked at the quarry is some 5.7 million tonnes as at 1st January 2015.

If the remaining reserve is fully quarried in accordance with the approved scheme, then it will be necessary to work the various faces and benches back to their final positions, and remove the haul roads and benches as part of these works. The effect of such operations would be to preclude access into the extension area, since the required internal access roads would no longer be available.

The application for the extension is thus being submitted in order to allow for an orderly transition from the existing quarry into the extension area, in a way which is operationally appropriate in terms of internal route access to the reserves.

2.2 Extension Design Principles

As part of the design process for the quarry extension, careful consideration has been given to the limits of extraction within the defined 'preferred area' identified in the LDP. In particular, consideration has been given to the advice set out in Minerals Technical Advice Note 1 (MTAN1) that a minimum buffer zone of 200 metres should be established to hard rock quarries "*unless there are clear and justifiable reasons for reducing the distance*" (ref MTAN1 paragraph 71).

The existing development scheme for quarrying at Craig yr Hesg will involve quarrying operations taking place within 140 metres of residential property at Coed y Lan Road, and the ongoing use of the primary crusher sited some 60 metres from the closest residential properties at Garth Avenue. The current planning application would not change these circumstances. The 'preferred area' identified in the LDP lies at a distance of some 125 metres from residential property in Glyncoch (Conway Crescent) at the closest point, and some 160m from the closest building within Cefn Primary School.

However, notwithstanding these limits set out in the LDP, the Minerals Background Paper (2009) accompanying the LDP indicates that "*the designation of the site does not afford the land, and specifically the entire boundary of the site guaranteed permission for extraction.....further evidence will be required to show how much of the site could be developed*", and the extent to which "clear and justifiable reasons" justify a reduction in a 200m separation distance.

The key element of the design of the extension development has thus been to reconcile the need to (i) ensure no significant adverse effects on the amenities of residential properties in the vicinity of the extension area, and (ii) avoid the unnecessary sterilisation of the high quality sandstone resource.

The limits of quarrying within the extension area have been defined to provide separation distances between the nearest residential properties and the closest point to the proposed limits of quarrying of:

- 251m to the closest property at Cefn Lee Farm;
- 243m to Cefn Primary School;
- 175m to Conway Close; and
- 221m to Pen y Bryn.

The assessment of the environmental effects of quarrying to such separation distances has been a key element of the EIA, notably in terms of the ability to undertake operations at such distances whilst complying with the noise and blast vibration criteria which have been recommended in Chapters 10.0 and 11.0 of the ES. It should also be noted that such distances represent the closest distance between the limits of quarrying and the closest residential property, and that for much of the operational

period, operations would be at greater distance, and at depth within the extension quarry void.

The process of defining the limits of quarrying within the extension area has been fully integrated with the design of landscape screening measures which have been designed with the four fold purpose of:

(i) providing a visual screening function;
(ii) a noise attenuation barrier;
(iii) a physical barrier which encloses the quarry; and
(iv) a landscape / ecological corridor which would provide a landscape and nature conservation benefit to the locality.

The northern screening feature has thus been designed not as an engineered bund, but as a new ridgeline screening landform which ties into the adjoining contours and which would be tree seeded as a new woodland feature linking with existing woodland areas in the locality. The appearance of the landform would be further enhanced by the construction of a new stone wall on its outer side again linking with existing stone walls in the locality.

Subject to these key design principles, the extension development would proceed as a conventional phased extraction and restoration programme, working generally from south to north across the extension area in three phases, developing the existing faces and benches along the northern side of the existing quarry into the extension area. Soils would be stripped from phase 1 and used to surface dress the screening landform. Thereafter, as the development progresses, the soils would be used for ongoing restoration in areas of the existing quarry which have reached their operational limits and are available for restoration.

The restoration works within the existing quarry and extension area would be implemented progressively as an integral part of the development, with the restoration strategy designed to create a variety of habitats and nature conservation orientated uses.

2.3 Quarry development scheme

Extraction of the reserves from the existing quarry is on-going and would continue throughout initial preparation works required to implement the extension area. In respect of the Dwr Cymru/Welsh Water main that currently passes in a north-east to south-west direction through the middle of the extension area, these works would include either its bridging or the diversion of the main. The diversion would route the water main along the outer edge of the northern screening landform, to re-join the existing pipeline alongside Darren Ddu Road.

The preliminary works would then focus on the creation of the northern screening landform and western screen bund. The main screening landform would be tree seeded, with the western bund allowed to naturally re-colonise.

The final preliminary works would involve the construction of some 220 metres of traditional stone walling along the northern boundary, and the erection of an internal galvanised steel palisade fence to ensure the security of the proposed extraction area.

The existing faces and benches would be worked through from the north-western extent of the current working area through Phase 1. Soils and overburden would then be stripped in turn from phases 2 and 3, with the material used for progressive restoration works within worked out non operational areas within the exiting quarry. These phases are shown on Figures 3.1 – 3.5 inclusive and provide for quarrying to the defined lateral limits of extraction, and to a maximum depth of 100m AOD.

The development would yield a reserve of some 10 million tonnes of sandstone from the extension area, which would be worked in conjunction with the remaining reserves of some 5.7m tonnes within the existing quarry.

2.4 Restoration Strategy

The broad principles of the restoration strategy are illustrated on **Figure 2.6,** and include three main elements, namely:

(a) on-site soils would be used for restoration planting in selected locations to reflect the pattern of existing woodland adjacent to the site;

(b) quarry benches and faces would be progressively restored during quarry phases, where consistent with operational requirements, with a variety of treatments to enhance the ecological and landscape value of the site; and

(c) the quarry floor would be restored using fine granular material / quarry waste, and soils stripped from the extension area. .

In view of the recognised ecological potential of restored mineral workings, the main objectives of the restoration proposals are focused on landscape amenity and nature conservation.

The restoration strategy is consistent with the approved restoration strategy for the existing Craig yr Hesg Quarry. This also reflects nature conservation after use objectives, and the scheme accompanying the extension / consolidation application is based upon applying the same restoration treatments and principles within both the existing quarry and extension area as part of a comprehensive and consistent approach to restoration of the overall site area.

2.5 Hours of Working

It is proposed that operations will be undertaken in accordance with the currently approved hours of working set out in the Environment Act Review schedule of conditions (ref permission ref 08/1380/10, April 2013) summarised below:

Operations	Monday to Friday	Saturday	Sunday/Public Holidays
Quarrying Operations (except in emergencies)	07:00 to 19:00 hrs	07:00 to 16:00 hrs	No working
Blasting	10:00 to 16:00 hrs	No blasting	No blasting
Drilling (above 180m AOD)	10:00 to 16:00 hrs	No drilling	No drilling
Drilling (below 180m AOD)	07:00 to 18:00 hrs	No drilling	No drilling
Soil stripping or bund creation/removal	08:00 to 17:00 hrs	08:00 to 13:00 hrs	No operations
Other than vehicles associated with manufacture of coated road stone, production of ready mix concrete or servicing etc of plant, no vehicles to enter/leave quarry except between hours:	07:00 to 19:00 hrs	07:00 to 16:00 hrs	No vehicle movements other than as specified opposite

2.6 Processing Plant

The proposed extension scheme does not propose any variation to the current processing arrangements. The stone quarried from the current working area and extension site would continue to be transported to the processing plant by dump trucks from where it is discharged into a primary crusher feed hopper located at the northern end of the plant site. The primary crusher reduces the stone in size, from where it is fed by enclosed conveyor to a secondary crusher and series of screens, which produce a range of single sized aggregate. The processed stone is moved by enclosed conveyors to a series of hoppers for loading out to road going vehicles, or to product stock piles within the plant site.

In addition to the quarry processing plant, the plant site quarry has also historically provided aggregate for an asphalt plant. The most recent r asphalt plant was decommissioned and removed from site in 2009 and at present the quarry supplies dry aggregate which is transported, in part, to asphalt plants elsewhere in Wales and England. However, in 2014 approval was granted for the erection of a replacement asphalt plant which is currently being erected. It is anticipated that the plant will be commissioned during 2015. An Environmental Permit for the plant has also been obtained from RCT, which will regulate emissions from the plant.

2.7 Output and Traffic Routing

There are no restrictions imposed by the existing planning permission relating to the rate of output from the quarry, or on the number of vehicles entering or leaving the site.

Almost all HGV's are routed southwards along the B4273 to Pontypridd, where the majority turn left at the traffic lights with the A473 to travel the short distance to the A470 grade separated interchange. Vehicles then either travel northbound or southbound on the A470 to their market destinations. There are no alternatives to this routing pattern since, with the exception of very occasional local deliveries, there are no markets northbound along the B4273. There are also width and height restrictions on the "Grovers Road" to Abercynon.

Recent and historic output has averaged some 400,000 tonnes per annum and this established rate and pattern of movement is not anticipated to change as a result of the extension development. Based upon a 275 day working year, and average vehicle carrying capacities of 20 tonnes, this generates an average of 70 deliveries per day.

Figure 2-1 Current Situation

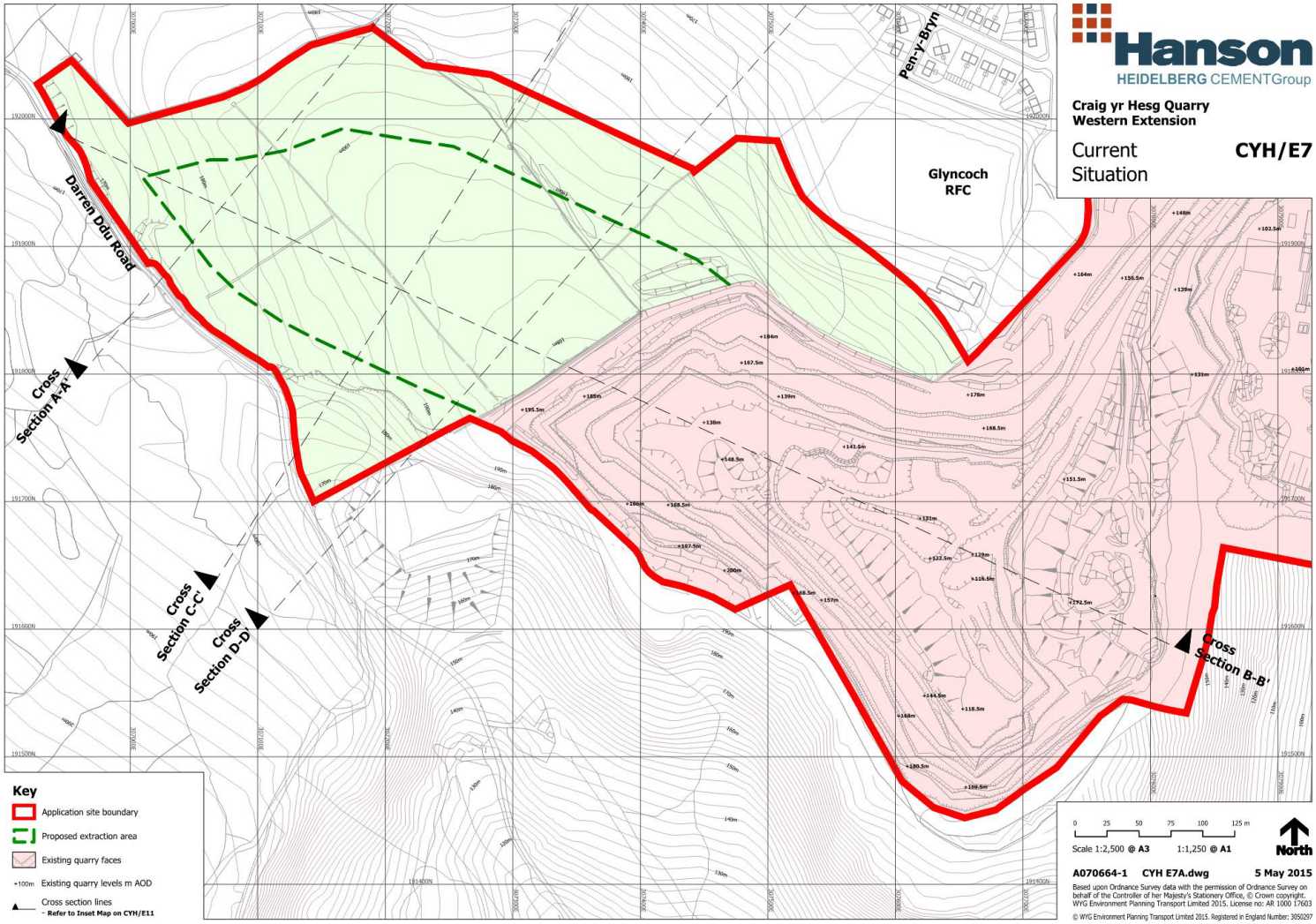


Figure 2-2 Initial Works

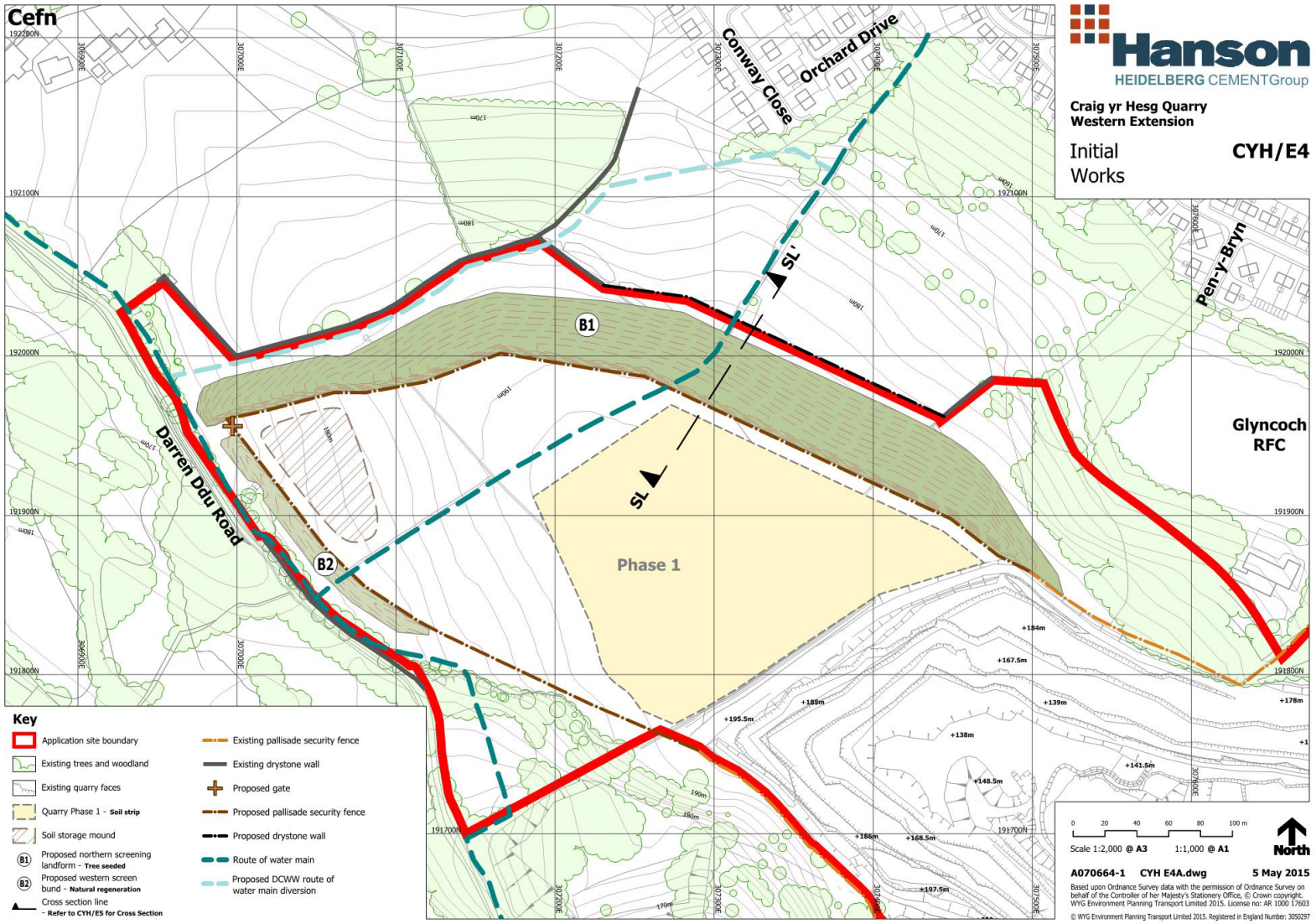


Figure 2-3 Phase 1 and Screening Landform

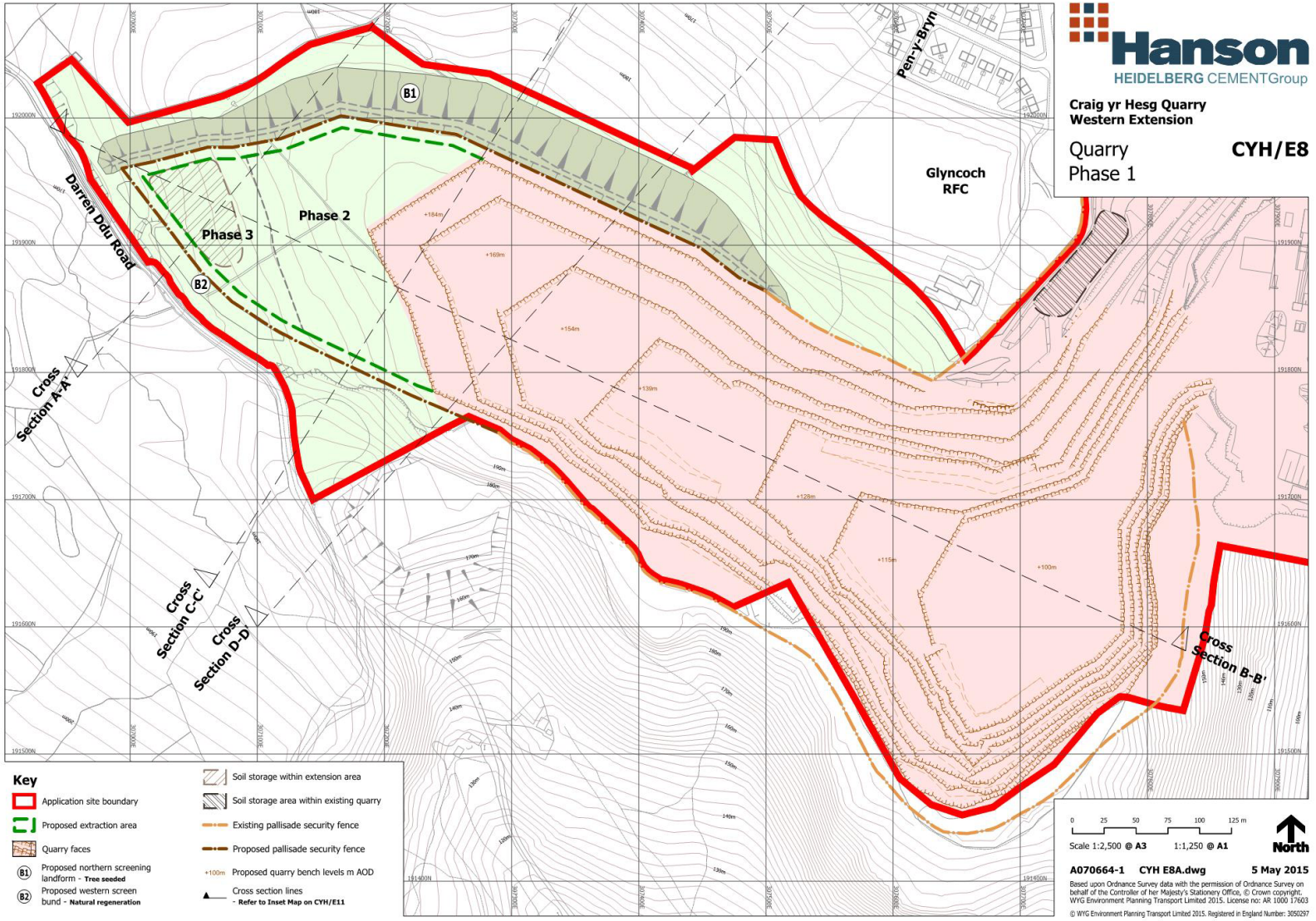


Figure 2-4 Phase 2

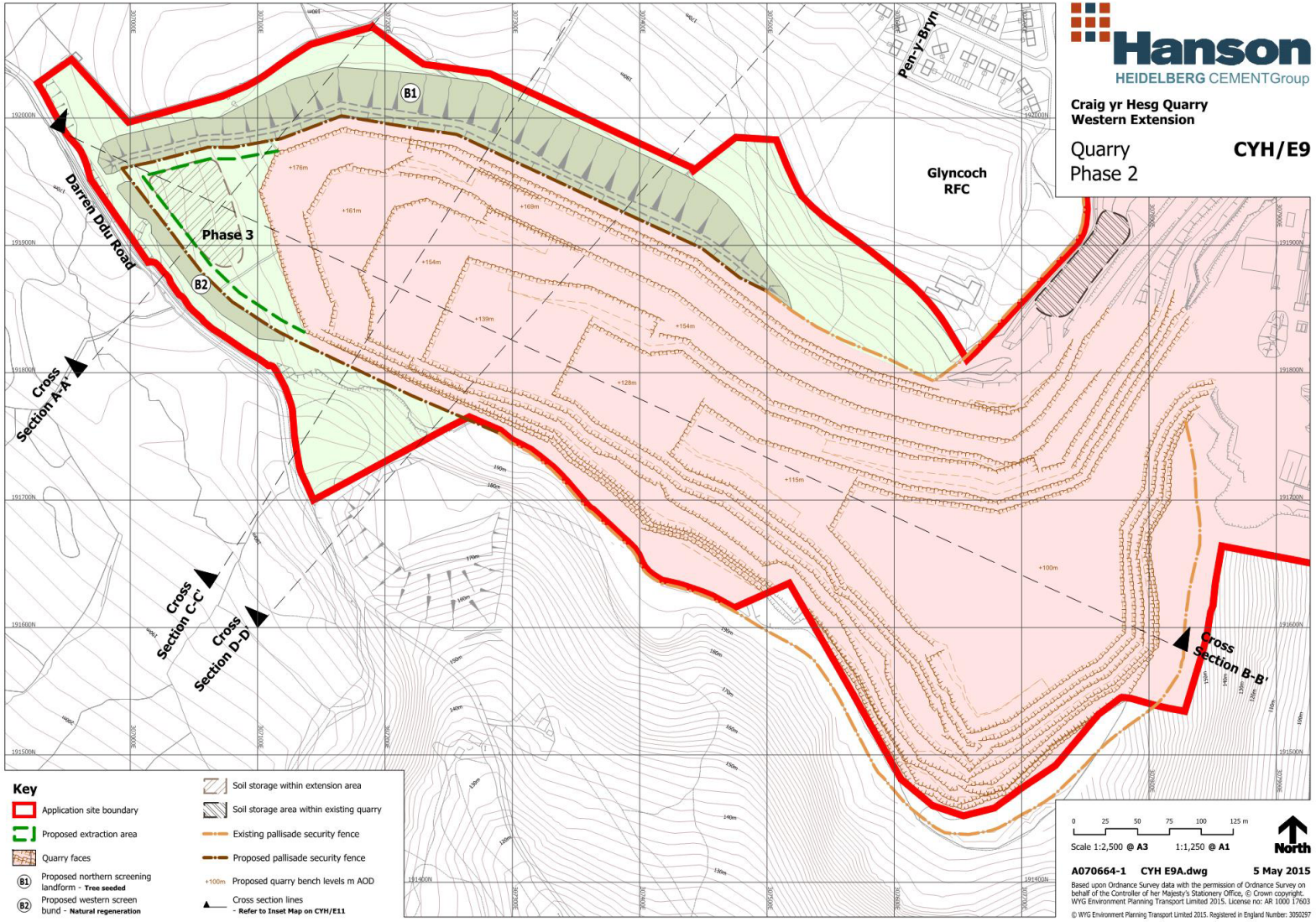


Figure 2-5 Phase 3

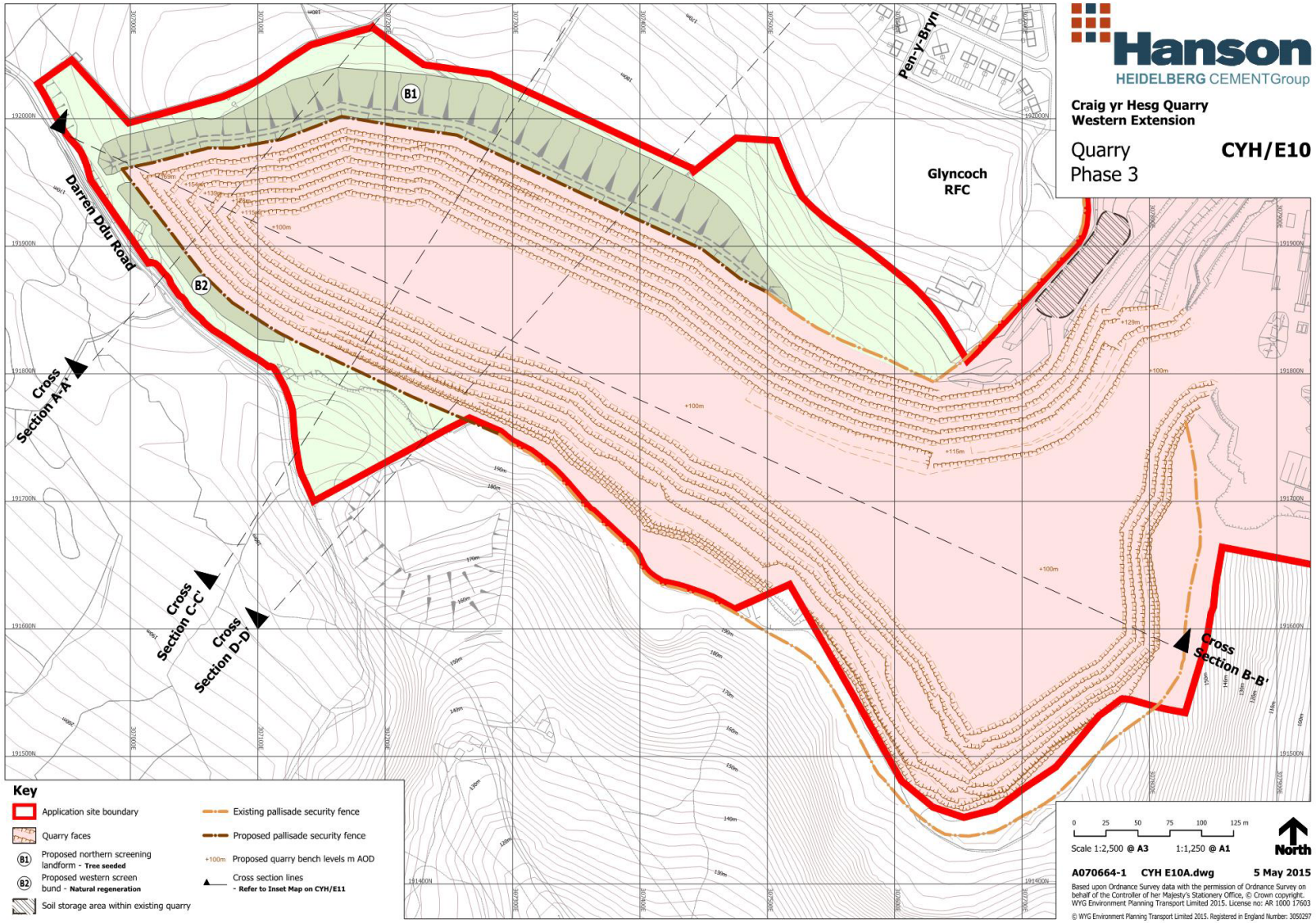
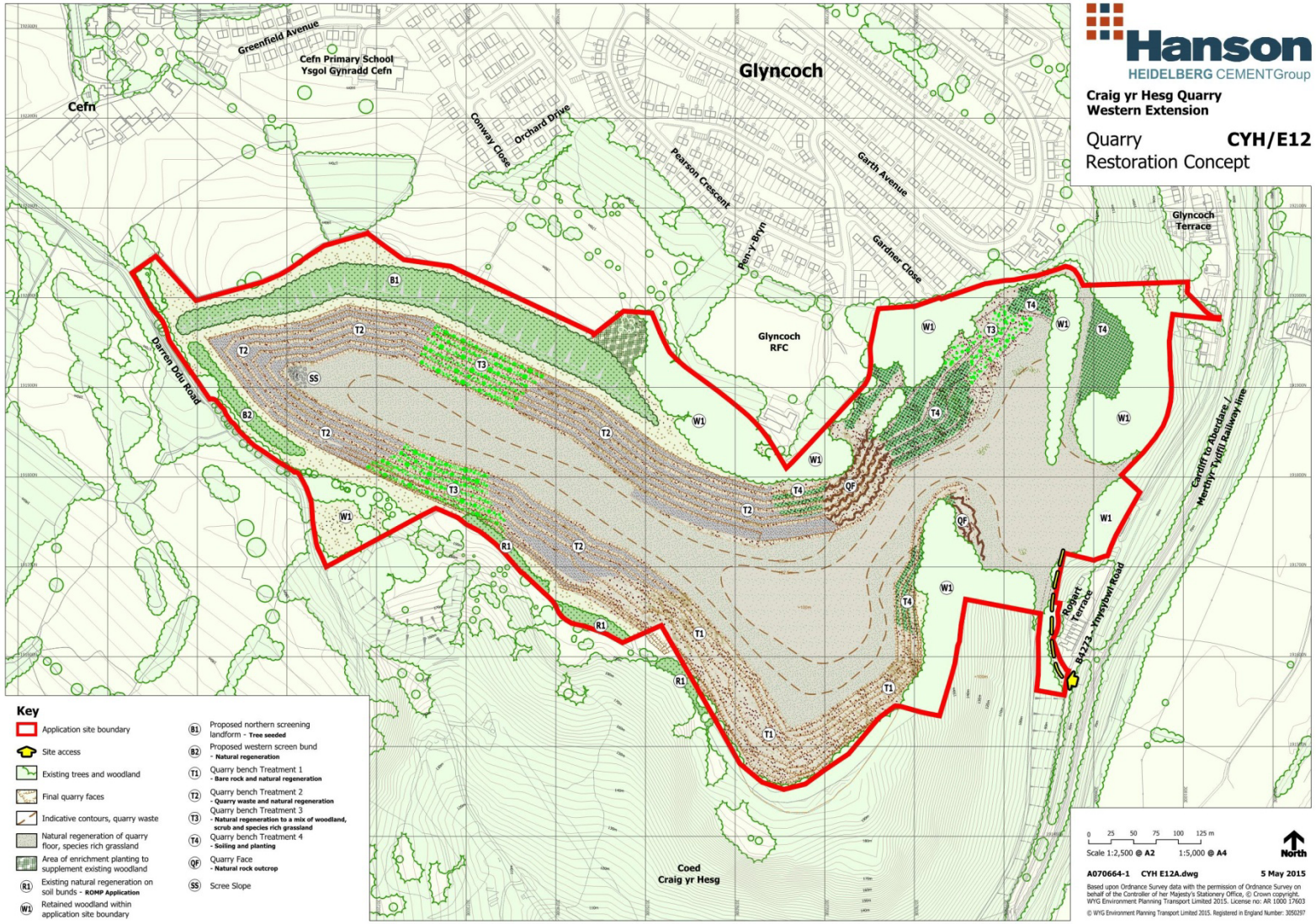


Figure 2-6 Restoration Strategy



3.0 SUMMARY OF ENVIRONMENTAL ISSUES

3.1 Introduction

The main Environmental Statement (ES) has considered the potential environmental effects of the proposed north west extension to Craig yr Hesg Quarry, the continuation of processing and related operations within the existing quarry, and the restoration of the overall application site including the extension area and existing quarry. Based upon the studies and content of the individual chapters, the underlying conclusion of the EIA is that the development is capable of proceeding in a way which would satisfactorily minimise environmental effects.

The general environmental acceptability of the development is re-enforced by the allocation of the extension area in the RCT Local Development Plan as a preferred area for future quarrying, being the only such preferred area allocated in the LDP.

The respective environmental studies have paid due regard to an exercise undertaken with RCT which has defined the environmental issues which should be assessed. Where relevant, the studies have made a series of recommendations for measures which could minimise effects.

These issues are set out below as a summary of the main findings of the ES and the conclusions which are drawn. For each topic, the summary describes the key elements of the study which has been undertaken, the mitigation measures which have been incorporated into the development scheme or which will be implemented as part of the ongoing development, and the conclusions which are reached regarding environmental effects.

3.2 Landscape and Visual Effects

3.2.1 LVIA Study

The proposed extension site is approximately 400m long and 300m wide at its widest part. It is located along a ridgeline with a highpoint located at the western boundary of the existing quarry. The highest part of the site is around 200m AOD where it joins the top of the northwest face of the quarry. From this point the land falls away in all directions to a low point of around 170m AOD in the westernmost corner of the site.

The site is currently semi-improved pasture with acid grassland and it includes two large fields and part of two other small fields. Field boundaries are dry stone walls; these are generally discontinuous with frequent gaps and partly collapsed sections.

Along the northern boundary of the site there is an area of plantation woodland and a row of trees, which are probably an overgrown hedgerow. This vegetation provides some screening from Cefn Primary School and adjacent properties at Cefn.

A continuous band of deciduous woodland extends along the southwest site boundary which is associated with Darren Ddu Road. This woodland links to Coed Craig yr Hesg through an area of rough grassland, bracken and scrub. The road is inaccessible to vehicles but is used as a public footpath. Publicly accessible, low level views of the site are available from Darren Ddu Road.

To the northeast of the proposed extension site there are two fields, similar in character to those within the site. Beyond these fields to the northeast is an area of rough grassland, bracken and scrub which provides screening between the site and the Glyncoch Rugby Ground, which is not visible from the site. The settlement of Glyncoch is located to the northeast of this area at a lower level than the site. Although house roofs are visible, views from the settlement towards the site, without mitigation / additional screening, would be limited to first floor windows due to the topography, garden boundary fences and vegetation.

Hedgerow trees, small areas of woodland and larger blocks of deciduous woodland on valley side slopes are characteristic of the area. Coed Craig yr Hesg, adjacent to the southern boundary of Craig yr Hesg quarry, is a densely wooded ridge rising from the valley floor at around 80m to a height of 200m AOD.

There are no public rights of way within the proposed extension site, and no public right of way links from Glyncoch westwards into open countryside. The nearest public route in the vicinity of the site is Darren Ddu Road, a track which is impassable to vehicles, believed to be a public right of way which runs generally north – south from Ynysybwl Road to the south west of the existing quarry, northwards to Ynysybwl. Public footpaths cross agricultural pasture land to the west of the site and connect with the minor road between Penygraigwen and Ynysybwl.

3.2.2 Landscape Mitigation measures

The key measures would comprise:

(i) The construction of a screening landform along the eastern, and northern site boundaries, with a smaller soil screen bund to be established along the western boundary. These bunds would be designed to encourage tree growth and natural re-colonisation and create a new woodland corridor to link with adjoining woodland. The screening landform and soil screen bund are particularly important to screen views from Darren Ddu Road and properties at Glyncoch and Cefn.

(ii) The proposed extension will result in the removal of approximately 500m of dry stone field boundary walls, much of which is in a poor state of repair. It is proposed to re-use the stone recovered from these walls to build a section of wall along the northeast side of the site. This will restore the field pattern and assist with screening of low level views from Glyncoch.

(iii) In order to maintain security within the extension site a palisade security fence would be located on the inner quarry side of the screening landform and soil screen mound.

(iv) It will be desirable to protect the retained vegetation along Darren Ddu Road and the western site boundary. A corridor of land averaging 35m wide would thus be retained between the quarry edge and Darren Du Road which would accommodate the soil screen bund, and which would be allowed to re-colonise with trees as an enhanced woodland corridor.

(v) The final restoration and after use proposals for the site represent the principal long-term measure in mitigation of potential landscape and visual effects. The quarry benches and faces would be restored when no longer required for operational purposes. A variety of treatments would be used to enhance the ecological and landscape value of the site.

(vi) Management of the site, including the growth and aftercare of vegetation, would focus on its nature conservation interest and amenity potential, resulting in substantial beneficial impacts on the biodiversity of the site. The landscape and visual appearance of the site would be improved as the tree planting and natural re-colonisation establishes and matures.

3.2.3 Landscape Impact

There would be a change in the character of the site associated with the introduction of the quarry extension, from that of grassland to an active quarry site.

The change to the landscape associated with the introduction of the quarry extension would be viewed in the context of the existing quarry development, urban development on the Taf Valley floor, roads and high voltage power lines within the area.

There would be a moderate to slight adverse impact on the setting of public footpaths within the study area, dependent on the dominance of the quarry extension in relation to the setting of the path. For a small section of footpath closest to the quarry extension the impact would be major adverse during construction of the screen bunds, but then reducing to moderate to slight adverse as vegetation on the bund

establishes. The impact on views from roads within the study area would be slight adverse-negligible.

Most properties closer to the site in Glyncoch have their views screened by landform and vegetation. Construction of the screening landform would have temporary short term slight-moderate adverse impact on some properties in Glyncoch and Cefn, however following its construction views of quarrying activities would be entirely screened from these properties.

Distant properties at a higher elevation with direct views towards the site are more likely to experience moderate adverse impacts. Impacts on residential dwellings and settlement range from moderate adverse to negligible.

There would be no direct impacts on the physical historic landscape resource of the area. There would be no impact on the nearby Listed buildings, ancient monuments, Conservation Areas or Landscapes of Special Historic Interest.

The quarry extension would not be a dominating feature within the area to such an extent that it would alter the character and perception of the Llwyncelyn Slopes Special Landscape Area. The overall impact on the SLA is assessed as slight adverse during operation, with the introduction of quarrying activities, reducing to negligible following restoration.

3.2.4 Visual Impact

The visual appraisal identified a number of locations from which the proposed extension site is visible. Six viewpoints were identified as representative of the most sensitive views available. The visual impact is assessed as major to slight adverse during construction of the screening landform, reducing to slight to moderate adverse during quarrying operations.

The progressive restoration of the quarry faces and benches would be visible, and selective areas of quarry bench planting, would soften their appearance. Following restoration of the site the visual impact would be negligible to slight beneficial.

The extent of the proposed extension area has been defined to retain important features and minimise impact on nearby properties and settlements. The western extent is defined by the retention of vegetation and stone walling along Darren Ddu Road. The northern extent is defined by the dry stone walls and vegetation along the field boundaries. Also, there is a gentle gradient towards this northern boundary before the land become steeper to the north. The eastern extent of the proposed quarry extension has been defined by the screening landform. The establishment of the screening landform would have the greatest effect in reducing potential adverse impacts from this direction.

Major adverse impacts identified are from selected areas close to the site boundary and will be short term, temporary impacts, which will reduce following the construction and seeding of the screening landform and natural regeneration of the western bund which act to reduce landscape and visual adverse impacts during the operational period.

3.2.5 Landscape Conclusions

The mitigation measures proposed would reduce the negative landscape and visual impacts associated with the extension of Craig yr Hesg quarry to an acceptable level.

3.3 Ecology

3.3.1 Ecology Study

The application site itself is not subject to any statutory designations.

Craig-yr-Hesg Local Nature Reserve lies immediately to the south of the existing quarry.

The application site includes a small area of the Craig yr Hesg / Lan Wood Site of Importance for Nature Conservation (SINC) which comprises an extensive area to the south west of the application site. The small area included within the application site lies outside the proposed area of extraction.

SINC's have been selected as sites of County-level ecological importance i.e. they are important within RCT, although unlikely to meet the criteria for selection as a site of national importance and receive a statutory designation.

The application site largely occurs within two fields enclosed by dry stone walls. The fields contain a sward of predominantly semi-improved grassland, which was found to be relatively species poor in terms of herbaceous species.

The wider surroundings comprise of the existing quarry void broadly to the south, semi-improved grassland and small woodland blocks to the north and east, with Craig-yr-Hesg/Lan Wood SINC extending slightly within and to the west of the application site.

The extension area lacks potential bat roost sites, and as such, has no value to roosting bats.

The extension area has been assessed as having limited opportunities for bats to forage and commute, due to the nature of habitats present and general setting/elevated position and exposure that the application site has. The habitats adjacent to the extension area i.e. woodland represent higher value foraging habitats and provide more sheltered commuting linkages for bats.

No evidence of badger has been recorded and although the occasional presence of badgers, as part of foraging in a wider territory, is a possibility, based on the absence of any field signs within the extension area itself, it is considered unlikely at the current time.

The presence of reptiles has been confirmed within the extension area, with one common lizard was observed during the survey. Previous surveys also recorded adder and slow worm in the wider site, with the potential for grass snake to occur also being a possibility.

The extent of habitats that are suitable for reptiles to use within the extension area is limited, as the majority of the extension area comprises of closely grazed grassland that lacks the features required by reptiles.

Opportunities for birds to nest within the extension area are limited, due to the relatively low occurrence of scrub and the predominantly open/closely grazed nature of the grassland which is of low suitability for ground-nesting species.

As such, given that areas of higher quality habitat for birds occur in the wider area around Craig-yr-Hesg quarry, the extension area itself is assessed as being of limited value for birds.

3.3.2 Ecology Mitigation measures

The most important opportunities to deliver biodiversity gains will arise during site restoration works, although preliminary works would also take place with habitat creation taking place along the northern screening landform, natural regeneration of the proposed western bund, and re-creation of dry stone wall boundaries to replicate and enhance the existing network of habitats bordering the extension area.

The proposed restoration has been designed to maximise ecological gains and to complement the surrounding Craig yr Hesg/Lan Wood SINC. The proposed restoration has also been designed to follow the principles of the currently approved restoration scheme for the wider site and includes the following key elements:

- Natural woodland regeneration along the western screening bund to strengthen adjacent woodland habitat corridor associated with Craig y -Hesg wood and Darren Ddu Road;
- Woodland creation through tree seeding along the northern screening bund to increase habitat linkage and provide screening for landscape purposes;

- Natural regeneration of pioneer vegetation and grassland communities on quarry benches; and
- Exposed quarry faces.

Mitigation for Loss of Habitat – Creation of New Habitats

The majority of the extension area comprises of species-poor grassland and is not assessed as having any particularly high habitat value. This is supported by the fact that with the exception of a small area at the southern extremity of the site, the extension area is excluded from the adjacent Craig yr Hesg / Llan Wood SINC.

The northern screening landform would be surfaced with soil stripped from phase 1 of the extension area, with the surface to be tree seeded designed to complement the wider woodland resource. The objective is to establish an area of woodland which would link with, and strengthen existing woodland blocks that border the northern areas of the application site and create both a landscape and wildlife corridor.

The western screen mound and average 35m wide corridor along the southern boundary would be allowed to naturally re-colonise with the objective of establishing a wider corridor of woodland and acid grassland along the eastern side of Darren Ddu Road.

As the proposed restoration is dedicated to the creation of habitats of nature conservation value, including grassland and scrub woodland, no further mitigation is deemed to be required.

Moreover, since the proposed restoration places an emphasis on natural regeneration, this would also ensure that species of local provenance would occur in the restored site.

No offsite/indirect habitat impacts have been predicted, although the proposed restoration would complement and contribute to the surrounding network of non-statutory designated habitats.

Mitigation for Impacts to Species

The potential for negative impacts to bats and invertebrates, that would require specific mitigation, has been ruled out based on the nature of the proposed quarry extension. The proposed restoration, and the initial screening measures, would nonetheless provide gains for these groups which would represent a positive impact.

To ensure that the development proposed within the extension area complies with the relevant legislation and conservation objectives for reptiles, a Reptile Mitigation Strategy (RMS) will be prepared in consultation with the LPA to set out a procedure for the clearance of known or potential reptile habitats.

This is considered an appropriate and proportional approach due to the small scale, and localised occurrence of habitat involved, the wider resource of habitats to be retained, and the longer term inclusion of suitable reptile habitats during site restoration.

The potential impacts to breeding birds are most likely to occur during vegetation removal. Such works can be timed to avoid the nesting season (the season is March to August) thus removing the potential for an impact in a given season to occur.

3.3.3 Ecology Conclusions

No significant adverse ecological impacts have been predicted and it is considered that the proposed nature conservation based restoration would provide a net gain for biodiversity in the long term.

3.4 Agriculture and Soil Resources

3.4.1 Agricultural Land Classification (ALC) and Soil Study

A soil survey has been undertaken by sampling soil at twenty locations using an auger and spade. This was supplemented by examining detailed records from a trial pit survey which described 18 profile pits

excavated to sandstone bedrock. Further information has been obtained from the Soil Survey of England and Wales, and information on detailed land classification has been obtained from the Land Use Planning Unit of Wales.

A typical soil profile comprises dark brown sandy clay loam topsoil 0.15 to 0.3m deep overlying a variable depth of orange brown sandy clay loam subsoil containing sandstone cobbles and slabs. Occasionally there is a shallow depth (0.05 to 0.15m) of pale grey sandy loam (weathered sandstone) overlying bedrock.

The Agricultural Land Classification study concludes that the majority of the site is Grade 4, with isolated areas of Grade 5 rock outcrops on the south west flank. The site does not contain land classified as being of best and most versatile quality. The requirement of Minerals Planning Policy Wales (MPPW) issued by the Welsh Government is that best and most versatile land should only be used for mineral extraction if, land of a lower quality is not available. These issues are thus addressed in the case of the Craig yr Hesg extension development which is confined to land of a lower grade (grade 4 and 5).

The key issue is to ensure that the soils from the extension area are used for other beneficial purposes.

3.4.2 Agriculture Mitigation Measures

The main negative agricultural impact of the proposals is the loss of agricultural land, albeit a maximum of grade 4 quality. The nature of the quarry development and resulting restoration profiles means that it is not possible to restore any substantive areas to future productive agricultural use. The scheme has however been designed to ensure the sustainable use of all the indigenous soils for the amenity/ nature conservation based restoration land uses which are proposed.

As part of the preliminary works, the soils from phase1 would be used to provide a soil profile of 0.4m of top soil and 0.6m of sub soil / overburden on the final contours of the screening landform, and the area would then be tree seeded. Residual soil would be placed on a permanent soil bund along the western boundary of the quarry.

All other soils, including those stripped from phases 2 and 3, and existing soil resources within stockpiles in the existing quarry would be used for restoration of the quarry benches and profiled final floor of the quarry.

3.4.3 Agriculture Conclusions

The nature of the quarry development and resulting restoration profiles means that it is not possible to restore any substantive areas to future productive agricultural use.

The effect of the extension development would thus be that some 9 hectares of land associated with the quarry extension and screening landform / screen bund would be lost to agricultural use. However, this relatively small area does not contain land of best and most versatile quality, and there would be no material effects on farm holdings.

The scheme has, however, been designed to ensure the sustainable use of all the indigenous soils for the amenity / nature conservation based restoration and after uses which are proposed.

Overall, the effects on agriculture and soil resources are considered to be minor / negligible

3.5 Ground and Surface Water

3.5.1 Ground and surface water study

The River Taf forms the major surface water drainage feature in the vicinity of Craig yr Hesg Quarry, flowing from north to south approximately 350 m to the east. Downstream of the site, the River Taf continues to flow south, joined by the River Rhondda approximately 1.6 km south of the site, through the suburbs and inner city of Cardiff, to discharge to Cardiff Bay.

The Nant Clydach flows from west to east approximately 850 m to the north of the Craig yr Hesg Quarry, at an elevation of between 80-90 mAOD. The Nant Clydach joins the River Taf 850 m north of Craig-yr-Hesg Quarry, east of Coed-y-Cwm. The river is largely sourced from

compensation release from Clydach reservoir located 6.6 km north-west of the quarry, and is augmented by numerous spring fed springs originating on both eastern and western valley slopes upstream of the confluence with the River Taf.

Numerous smaller features were identified during the water features survey, comprising springs, streams and small wetland areas.

Groundwater levels in the Pennant Measures within the quarry are monitored via an observation borehole which supports the conclusion that the elevation of the regional water table is lower than the permitted base of the excavation (100 m AOD) with maximum water levels of 96.77 m AOD being observed.

Several minor streams were identified during the water features survey in the direct vicinity of the quarry. These originate from spring flows on the mid slope areas. Stream flows are ephemeral (not present all year round), with lengths of dry channel, sinking and re-emergence behaviour identified in the upper reaches.

Groundwater levels recorded in a monitoring borehole immediately north-west of the quarry are between 15-25 m below the elevation of the springs at Cefn (165-167 m AOD). This indicates that these springs are likely fed from an upper groundwater system on the north-western slopes of Craig yr Hesg which is independent of that adjacent to the quarry.

The following features are considered to be potentially at risk of impacts from the quarry development:

- Minor spring flows feeding the Nant Tai'r-heol at Cefn and Daren-Ddu Stream. However, it is considered that the streams are likely to be fed by a separate 'perched' groundwater system and the effect of increasing the area of the quarry base at 100 m AOD will have no further impact upon these surface waters.
- Groundwater quality in the Pennant (Upper Coal) Measures minor aquifer. The development and operation of excavations which require the collection and discharge of site water have potential to affect groundwater and surface water quality. This potential includes increased sediment loads and pollution from spillages of fuel oil etc. However, established procedures are in place at the existing quarry to minimise the potential for such occurrences, including the storage of fuel in appropriately constructed and maintained tanks within bunded areas and the use of oil interception screens.

  With the mitigation incorporated in the existing and proposed operation (as described above) the potential effects are considered to be negligible.
- Surface water quality in the River Taf. The quality of discharge from the site is controlled by the on-site settlement lagoon system and regulated by the existing discharge consent to the River Taf. This has ensured no concerns regarding the quality of surface water leaving the site and this is not expected to change as a result of the extension development given that the water which is discharged originates from the processing plant area and not the quarry workings.
- Effects on wetland areas to the south of the Craig yr Hesg Local Nature Reserve (LNR). A wetland and spring was observed immediately to the south of the boundary of the Local Nature Reserve (LNR) but outside the LNR at between 80 to 90 m AOD. However, a level of 107 m AOD has already been reached in the southern end of the quarry. It is considered that any effects on these features would already have occurred and that extending the area of the quarry to the north at 100 m AOD would have negligible further effect either on these or similar features in the vicinity of the LNR.

3.5.2 Water Mitigation Measures

Given that there are not expected to be any significant impacts to the receptors defined, mitigation measures are not required. Due diligence will be maintained throughout the proposed development to ensure this remains the case. This includes the continued employment of settlement lagoons to ensure suspended solid loads remain below the consented limit and receiving water courses are not adversely affected by the quarry discharge. The proposed quarry extension does not impact on the existing situation for the quarry discharge.

3.5.3 Ground and Surface Water Conclusions

Regional groundwater levels are considered to be below the current and proposed minimum base level of the quarry (100 m AOD).

Spring flows on the western and southern slopes are likely to be associated with the presence of perched groundwater above the main groundwater table.

No active dewatering of the quarry is currently required or is anticipated to be needed for the working of the quarry within the current site or the proposed extension area.

Minor spring flows feeding the Nant Tai'r-heol at Cefn and Darren Ddu streams in the vicinity of the quarry are the only potential surface water receptors that have been considered to be potentially at risk of impact from the proposed quarry operations. The risk of potential impact is considered to be low, and any minor impact is likely to have occurred historically as the quarry base is already well below the elevation of these springs.

Potential impacts on surface water and groundwater quality will be adequately mitigated by standard quarrying good practice measures and the existing discharge consent.

Following the cessation of operations at Craig yr Hesg Quarry and restoration of the site, it is proposed to cease management of surface water within the quarry.

It is considered that there will be no significant impact to hydrological/hydrogeological receptors from the proposed development at Craig yr Hesg.

3.6 Noise

3.6.1 Noise Study

The noise assessment follows a conventional approach of establishing current background noise levels, via noise monitoring at representative properties in the vicinity of the extension area; determining the sound power levels of plant to be utilised; calculating site noise levels at the representative properties; and comparing the site noise levels with conventional criteria set out in Minerals Technical Advice Note 1 (MTAN1) issued by the Welsh Government.

Whilst the application will be for an extension to the quarry, it is also a consolidation application and therefore it is appropriate to comment on the noise contribution from the processing plant and related operations at the quarry which will form part of the overall noise climate.

The noise study undertaken in 2009 as part of an EIA and ES submitted in support of an application to update the planning conditions at the quarry, and the resulting updated planning conditions form a context to the study, together with more recent noise monitoring which has been undertaken.

In undertaking the study, reference has been made to the current planning conditions relating to noise, guidance on the approach to noise studies and noise limits set out in MTAN1, and additional guidance on noise levels at schools.

As part of the study, noise measurements were taken in July and November 2014 at representative properties in proximity to the extension site, and reference has been made to noise levels recorded in a similar noise monitoring exercise undertaken in 2009.

The recorded average background noise levels have been used to inform suggested noise limits at the defined properties which could form the basis of a planning condition in a similar form to that included in the current schedule of planning conditions for the existing quarry, but with the condition amended and updated to include the additional monitoring locations referred to.

3.6.2 Noise Mitigation Measures

The principal noise mitigation measure is the proposed construction of the northern screening landform. The noise attenuation which could be provided by the landform has been a significant factor influencing the

design of the landform with particular reference to the height of the landform and the barrier attenuation it can provide. This is of key relevance to operations (shot hole drilling) which will take place on the top level of the quarry on the inner side of the screening landform.

The other main mitigation measure is the selection and use of a rock drill with a sound power level not exceeding 116 $dBL_{WA,}$ and maintaining quarry benches with a minimum height of 7m to provide further noise barrier attenuation.

It is also proposed that the northern screening landform and western screen bund would be constructed within a period of up to 8 weeks. This will ensure that these noisier activities are completed within a short period of time and in accordance with the temporary noise limits prescribed in government guidance (MTAN1).

3.6.3 Noise Conclusions

The noise assessment follows a conventional approach in accordance with technical advice contained in MTAN1.

Noise limits have been proposed which adopt the current noise limits imposed at No 3 Pen y Bryn, Garth Avenue and No 1 Rogart Terrace (ref current planning condition 18), but with a suggested lower noise limit at Conway Close (no 36) compared to the limit currently imposed in condition 18. Noise limits have also been proposed for a representative property to the north (Cefn Heulog) and at Cefn Primary School.

The calculated site noise levels for the extraction operations, with the barrier attenuation afforded by the screening landform, for daytime operations are around 45 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ at the nearest dwellings to the extension area and at the school. For some locations, the calculated site noise levels for the extraction operations are slightly more than 10 dB(A) above the average daytime background noise levels. However, the calculations confirm that the development could proceed in compliance with the noise limits which have been proposed.

The calculated site noise levels for the construction of the screening landform are around 60 dB $L_{Aeq,\ 1\ hour,\ free\ field}$ at the nearest dwellings depending on the amount of equipment that is used for that operation. For all receiver locations, the calculated site noise levels are below the noise limit recommended in MTAN1 for temporary operations.

It is recommended that the existing site noise monitoring scheme be amended, to include additional monitoring locations at Cefn Heulog and Cefn Primary School that are representative of the nearest noise sensitive properties to the north of the proposed extension area.

3.7 Blast Vibration

3.7.1 Blast Vibration Study

At Craig yr Hesg Qarry the rock is extracted by a succession of controlled blasts from quarry faces. Each blast is individually designed with boreholes charged with explosives and detonated in a way which loosens and breaks up the rock, which can then be excavated from a rock pile and transported to the exiting crushing and screening plant for processing.

Ground vibration arsing from blasting is calculated in terms of ‘peak particle velocity’ (PPV), and is measured in millimetres per second (mms). Detailed research has determined that vibration levels well in excess of 50 mms are necessary to produce structural damage to residential type properties. For human perception, government advice is that limits should be set in the range of 6-12 mms.

Vibration is also generated within the atmosphere where the term ‘air over pressure’ is used. However, unlike with ground vibration, predictions of air overpressure can be made less certain by the fact that air over pressure levels may be significantly influenced by atmospheric conditions. Hence, the most effective method of control is its minimisation at source.

It is important to realise that for any given blast it is very much in the operators interest to always reduce vibration, both ground and air borne

to the minimum possible in that this substantially increases the efficiency and hence the economy of blasting operations.

MTAN1 gives advice on suitable planning conditions to control the environmental impact of blasting operations at quarries. This includes the advice that:

> *"Maximum level of ground vibration at sensitive locations: ground vibration as a result of blasting operations should not exceed a peak particle velocity of 6 mms $^{-1}$ PPV in 95% of all blasts measured over any 6 month period, and no individual blast should exceed a peak particle velocity of 10 mms $^{-1}$ PPV".*

The current planning conditions in place at Craig yr Hesg Quarry are consistent with these limits.

A criterion of 75 mms^{-1} measured on the pipeline has been deemed suitable for the protection of the water main which lies in proximity to the proposed extraction.

All blasts are monitored at Craig yr Hesg Quarry, and detailed records are maintained. These records confirm that the currently imposed ground vibration limits are being adhered to, and can continue to be adhered to as part of the extension development scheme. This includes quarrying to the proposed limit of within 175m of the closest property to the extension area.

As part of the vibration study, a review has been undertaken of blast vibration monitoring data recorded between January 2012 and April 2014, comprising a total of 30 No. blasting events. The blasting was undertaken with either nonel (electric) or "Hotshot" (electronic) detonating systems. Examination of the data indicates that the electronic detonation system consistently produces lower PPVs than the equivalent blast using electric detonators, with recorded PPVs well below the criterion level of 6mms^{-1} PPV. This was confirmed by an analysis of 3 specific production blasts in 2014 using multiple items of monitoring equipment (seismographs).

3.7.2 Blast Vibration Mitigation Measures

In view of adherence to the current blast vibration limits (and the MTAN 1 recommended limits), no specific additional mitigation measures are considered to be necessary.

However, the Operator's Good Practice Guide outlined in the DETR report The Environmental Effects of Production Blasting from Surface Mineral Workings is already, and would continue to be, adopted to ensure that the potential for ground-borne and airborne vibration would be minimised at Craig yr Hesg Quarry.

3.7.3 Blast Vibration Conclusions

Vibration criteria for restricting vibration levels from blasting operations at Craig yr Hesg Quarry have been recommended in order to minimise impacts on nearby residents. Accordingly, a criterion of 6 mms^{-1} for 95% of blasts in any six month period, with an overall maximum of 10mms^{-1} has been suggested for residential locations. This criterion is consistent with the current limits at the existing quarry, and is in line with the recommended planning conditions pertaining to blasting operations contained within MTAN 1. This would continue to ensure that all blasting would be entirely safe in terms of damage to residential property, and would avoid the possibility of even the most cosmetic of plaster cracks.

With such low ground vibration levels, accompanying air overpressure would also be of a very low and hence acceptable level, although possibly perceptible on occasions at the closest of properties.

With respect to the water main pipelines a criterion of 75mms^{-1} at 99.99% confidence limit has been suggested.

There are likely to be some occasions, particularly during working of the north eastern extremities of the extraction area, where there will be a need to exercise particular care in minimising vibration levels. This would involve using charge reduction techniques to ensure that a peak particle velocity limit of 6 mms^{-1} at a 95% confidence is not exceeded at any property. Similar considerations would also apply for blasting

adjacent to the water mains, but these are conventional blasting design considerations which can ensure adherence to the prescribed limits.

3.8 Air Quality

3.8.1 Air Quality Study

The air quality assessment has considered the impacts of the proposed westward extension of the existing quarry on potential receptors in the vicinity. These include Cefn Primary School and houses to the north and northwest at Glyncoch. Due to the separation distances between the potential receptors and the extension, the local presence of screening woodland, and the low frequency of winds between the extension and receptors, the potential impacts from wind-blown dust are generally negligible.

An area of housing in Glyncoch around Conway Close does lie sufficiently close and within a more frequent wind direction to potentially experience moderate impact in the absence of mitigation measures. However, preliminary dust deposition monitoring adjacent to the existing quarry shows negligible rates of dust deposition, and when the screening effect of the perimeter screening landform, and the majority of quarrying operations being at greater depth are taken into account, then the potential impacts from dust at the potentially most vulnerable receptors are likely to be of short duration and slight.

Nuisance dust is not considered to be a significant issue currently outside the site. Whilst recent monitoring results for dust deposition alongside the main quarry haul road have recorded elevated levels of solids, the area in question is subject to dust suppression measures which serve to minimise the extent of dust.

The UK government has set Air Quality objectives designed to protect human health which include for fine particulates (referred to as PM10) exceeding a level of 40 microns per cubic metre as an annual average. Air quality observations to the north of the existing quarry processing plant, in the Garth Avenue area of Glyncoch, has been the subject of much analysis over recent years, with monitoring PM_{10} being carried out by Hanson and RCT. Data over the last 12 months shows no likely breaches of the air quality objectives.

Winds blow from the south, from the quarry towards Garth Avenue relatively infrequently, and whilst elevated levels of PM_{10} have been detected on some occasions, with the quarry being identified as a contributory source, monitoring data has shown that the PM_{10} contribution from the quarry represents only a small percentage (at worst 11.25%) of the air quality objective.

Recent (2014) monitoring by RCT has shown average PM_{10} concentrations at Garth Avenue to be about half of the long term air quality objective, with no significant probability of the short term objective being exceeded. The conclusion is that the existing quarry operations are not causing unacceptable impacts with respect to PM_{10} outside the site.

The pending re-commencement of asphalt production within the processing plant area will provide an additional source of PM_{10}, and dispersion modelling predicts a negligible potential increase in PM_{10} at the nearest residential area to the north at Garth Avenue.

3.8.2 Air Quality Mitigation Measures

To minimise the potential impacts, the continuation of quarrying, related operations and the extension development will be conducted in accordance with best practice guidance and, for the mineral processing and treatment operations, the existing Environmental Permit conditions. The essence of the guidance is that dust emissions can be controlled by effective site management.

The measures for the control of dust on site will comply with any conditions which may be specified by RTC; will involve a continuation of current visual monitoring and controls; and will accord with the Hanson Environmental Management System. The Quarry Manager will refer to the planning conditions and routine visual inspections to determine his response to potential or actual dust emissions, taking into account current and forecast weather conditions.

The Quarry Manager will record all dust and air quality complaints, identify causes, take appropriate measures to reduce emissions in a timely manner, and record the measures taken. A complaints and activities log will be maintained and made available to RCT if requested.

The current programme of dust monitoring is being reviewed in the light of the findings from the 12 month study period undertaken in accordance with the planning conditions imposed on the existing quarry. Subject to this review, further monitoring surveys within the site may be required, together with the deployment of additional routine monitoring and mitigation measures if appropriate.

3.8.3 Air Quality Conclusions

Therefore, the overall effect of an extension to the life of the quarry operations is concluded as acceptable in terms of human health, as air quality objectives outside the site will continue to be met. Nevertheless, the quarry is acknowledged as a potential source of particulate emissions that will require continued management and further monitoring. It is a requirement of the existing Environmental Permit covering the mineral processing and asphalt plant that best practicable means are used to control emissions, and the Permit will continue to be reviewed and enforced by RCT.

With regard to other air quality issues, in particular the potential for odour releases from the asphalt plant, the potential for nuisance impact is considered to be slight to negligible.

3.9 Traffic

3.9.1 Traffic Study

The assessment of the impact on the local highway network of the proposed northwest extension at Craig yr Hesg Quarry has considered the extant planning permission and the implications of the proposed activities going forward.

The proposals effectively represent a continuation of current activities as the proposed hours of operation, method of transport and types of vehicle used would not materially change. Whilst there has been a revision to the existing access configuration, these works represent an improvement to the current access / egress arrangements. Traffic movements are currently permitted and can continue to the end date of the current planning permission (31st December 2022).

The safety performance of the site accesses and local highway network, which continue to accommodate daily HGV movements, has been reviewed using collision records obtained from RCT. The records confirm that there have been no recorded accidents at the site accesses and no recorded accidents involving HGVs on the neighbouring highway network.

The typical rate of output would result in an average of 70 loads/140 HGV movements per day on the local road network.

In accordance with the ongoing and historic operations, the majority of HGVs travelling to/from the site would travel to/from the south via the B4273, A4223 and A470.

Traffic flow information provided by RCT confirmed that the B4273 currently operates at 67% of its design capacity and therefore retains a reserve or spare capacity of approximately 500 vehicles, or 33% of its design flow, under peak hour conditions. As a result, capacity is not considered to be a constraint to the ongoing development at Craig yr Hesg Quarry.

3.9.2 Traffic Mitigation Measures

A designed-in mitigation measure has already been implemented with the construction of the new two way access to the quarry and the improved visibility and geometry which will be associated with the new junction onto the B4273, compared to the visibility splays and geometry at the historical exit further to the north.

The existing road network currently accommodates the traffic associated with the activities at Craig yr Hesg Quarry, which are assumed will continue as existing.

As has been established, the existing road network has sufficient capacity to accommodate the traffic and has a sufficient level of geometric design to facilitate safe access, as demonstrated by the lack of accidents involving HGVs within the study area in recent years.

In general terms, the highway network is therefore considered to be acceptable and no geometric improvements to the site access are required to accommodate the ongoing activities at Craig yr Hesg Quarry beyond routine maintenance of the new quarry access road and its visibility splays.

3.9.3 Traffic Conclusions

Following completion of the review of the highway and transport implications of the proposed development it is concluded that:

- The recently improved site access is acceptable to serve the proposed development;
- Quarry traffic is already accommodated on the local road network, which has been demonstrated to retain substantial spare capacity;
- There are no recent records of accidents involving HGV's in the vicinity of the quarry or on the identified access route to/from the A470; and
- The existing planning permission provides for the existing HGV activity to continue until 31st December 2022. As a result, any current, committed or future development that may be approved, which could have an impact on the local highway network, would take the existing and proposed HGV movements into account.

Accordingly it is concluded that the proposed development is acceptable in terms of highway and transport considerations.

3.10 Cultural Heritage

3.10.1 Cultural Heritage Study

There are no known heritage assets within the site. With the exception of a single chance find of a Neolithic flint tool within the wider environs of the site, the recorded activity with the study area and within the broader surroundings of the site consists entirely of later post-medieval and modern remains, mostly associated with industry and transport.

There is thus a low potential for the presence of archaeological remains within the site although, due to the lack of modern disturbance, the survival of archaeological features within the site cannot be wholly ruled out.

The extraction activity within the footprint of the proposed quarry extension and screening landform / bund would lead to a permanent removal of any archaeological remains which may be present, leading to Major Adverse impacts upon any archaeological resource.

The proposed development will not affect the settings and the significance of any designated heritage assets within its environs, which comprise a number of Listed Buildings,.

3.10.2 Cultural Heritage Mitigation measures

Proposed mitigation measures with regard to the archaeological resource include archaeological monitoring in the form of a watching brief during soil stripping, which would ensure the preservation by record of any remains which could be impacted upon by the development. The scope and methodology of these works will be agreed with the LPA through consultation with the Archaeological Planning Manager for Glamorgan Gwent Archaeological Trust prior to development.

3.10.3 Cultural Heritage Conclusions

It has been established that the proposed development will not result in significant adverse effects upon the cultural heritage resource.

No significant effects upon designated heritage assets within the surroundings of the site are anticipated as a result of the proposed development.

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4.0 CONCLUSIONS

This document comprises a Non Technical Summary of an Environmental Statement which provides a detailed and objective analysis of the potential environmental effects which would be associated with the proposed extension to Craig yr Hesg Quarry and the related operations within the existing quarry.

The application site boundaries have been drawn to encompass the proposed extension area and existing Craig yr Hesg Quarry as part of a 'consolidation application'. This is designed to facilitate the issuing of a single planning permission, covering all extraction, restoration, processing and related operations at the Quarry.

The ES confirms the details of the proposed extension development and related operations which provides a single quarry development and restoration scheme for the site. The restoration scheme builds upon the details of the currently approved restoration concept for the existing quarry and its nature conservation after use objectives by applying the same restoration treatments and principles within both the existing quarry and extension area as part of a comprehensive and consistent approach to restoration of the overall site.

The ES draws together the inputs from specialist consultants who have undertaken the ES, and sets out the results of very careful research into each of the potential environmental effects of the development. Where relevant, the technical chapters make recommendations for measures to mitigate the environmental and amenity effects of the development which, in the majority of cases draw upon existing, well established and effective controls at the existing quarry.

The ES also draws upon mitigation measures which have been designed in to the proposed development scheme, central to which is the proposed establishment of a northern screening landform designed to minimise the visual and noise effects of extraction operations within the extension area.

All quarry developments will give rise to some degree of environmental effects, and this is inevitable given the nature of the operations which are involved. However, the requirement of national planning policy (MPPW) and the advice in MTAN1 is to ensure that effects are "minimised" and maintained "within acceptable limits" rather than eliminated. The conclusion reached by the ES is that the proposed scheme would successfully "minimise" the environmental effects, and that the existing substantial package of mitigation measures are capable of being adopted in relation to ongoing and future operations at the site which would ensure that the effects of operations are maintained "within acceptable limits".

The limited residual environmental effects need to be balanced against the wider planning policy considerations which are discussed in the accompanying Planning Application Statement. Of particular relevance is the high quality of the aggregates produced at Craig yr Hesg which national planning policy recognises as a 'special case' in terms of supply, and where national planning policy requires Planning Authorities to recognise the UK importance of the resource. This importance is reflected in the content of the RCT Local Development Plan which allocates a 'preferred area' for an extension to Craig yr Hesg Quarry (the extension area within the current application site) as the only preferred area allocation in the Plan for future aggregates extraction in the RCT area.

In the light of the above considerations, it is concluded that the development could proceed in accordance with the underlying objectives of policies relating to the extraction of aggregate, and, in particular, within the context of national planning policy and in accordance with policy in the LDP.

In all these circumstances it is considered that there should be a firm presumption in favour of permission being granted.