Heidelberg Materials

Produced by

LANDESIGN
PLANNING & LANDSCAPE

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Regulation 25 Response - Non-Technical Summary - Update

(Town and Country Planning (Environmental Impact Assessment) Regulations 2017

PLANNING APPLICATION 2024/0066/MIN

Proposed extensions to Grange Top Quarry, for construction and use of a new access and site access road from the A606, a security gatehouse, bridleway bridge and associated works to facilitate the continued supply of minerals to Ketton cement works, the consolidation of existing mineral extraction permissions and a restoration scheme to recreate agricultural land and biodiversity enhancement works.

December 2025

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Northwest Land
Field 14

Non-Technical Summary

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1 Introduction

1.1 This non-technical summary addresses the issues relating to a planning application to extend Grange Top Quarry at Ketton, Rutland.

1.2 A planning application has been submitted by Castle Cement Ltd Limited (trading as Heidelberg Materials) to Rutland County Council (the Council) setting out the detailed proposals.

1.3 Alongside the planning application is an Environmental Statement (the ES) which investigates the likely significant effects on people and the environment and proposes mitigation measures where necessary.

1.4 The ES is written in a technical style and includes detailed assessments, which provide more technical detail than some readers require. This non-technical summary (the NTS) has therefore been prepared to provide a more simplified summary of the ES. Should the reader require more detailed information than is set out below, the ES is likely to answer those queries.

1.5 Following the initial public consultation, the Council issued a Regulation 25 Request (the Reg' 25 Request) seeking clarification on certain matters. A response to that Reg' 25 Request has been prepared. This NTS is an updated version of the original NTS, amended to reflect the regulation 25 Response (the Reg' 25 Response)

THE SITE

1.6 Ketton Cement Works sits to the north and east of Ketton village, on the A6121 road. The operations comprise two elements: -

- The cement works (the Works), including the kilns, packing and handling facilities and the rail head, i.e. the plant that takes raw mineral and turns it into cement powder for sale.
- Grange Top Quarry (the Quarry). This is the source of the minerals that supply the cement works. i.e. where limestone and clay are extracted from to feed the cement works.

1.7 The Works sits at Ketco Avenue, east of Ketton village and is a prominent structure, visible from much of eastern Rutland. The Quarry sits to the north and west of the Works and has been operating for over 100 years. In recent years the workings have progressed through the old Empingham Road and currently sit to the immediate west of Wytchley Warren Farm, close to North Luffenham Airfield.

1.8 The planning application does not propose any changes to the existing works but does propose two new quarry areas as follows: -

- Northwest Land (NW Land)

- Field 14.

Northwest Land (NW Land)

1.9 NW Land abuts the A606 Stamford Road, east of Empingham village. It comprises approximately 130 hectares of arable land broken by several hedgerows and includes a private airfield in its centre.

Field 14

1.10 Field 14 sits west of Empingham Road, Ketton and north of Ketton village.

1.11 Both extensions sit on top of the Ketton plateau, generally at a higher elevation than the surrounding villages, which tend to sit on the lower valley slopes of the rivers Gwash and Chater and Rutland Water.

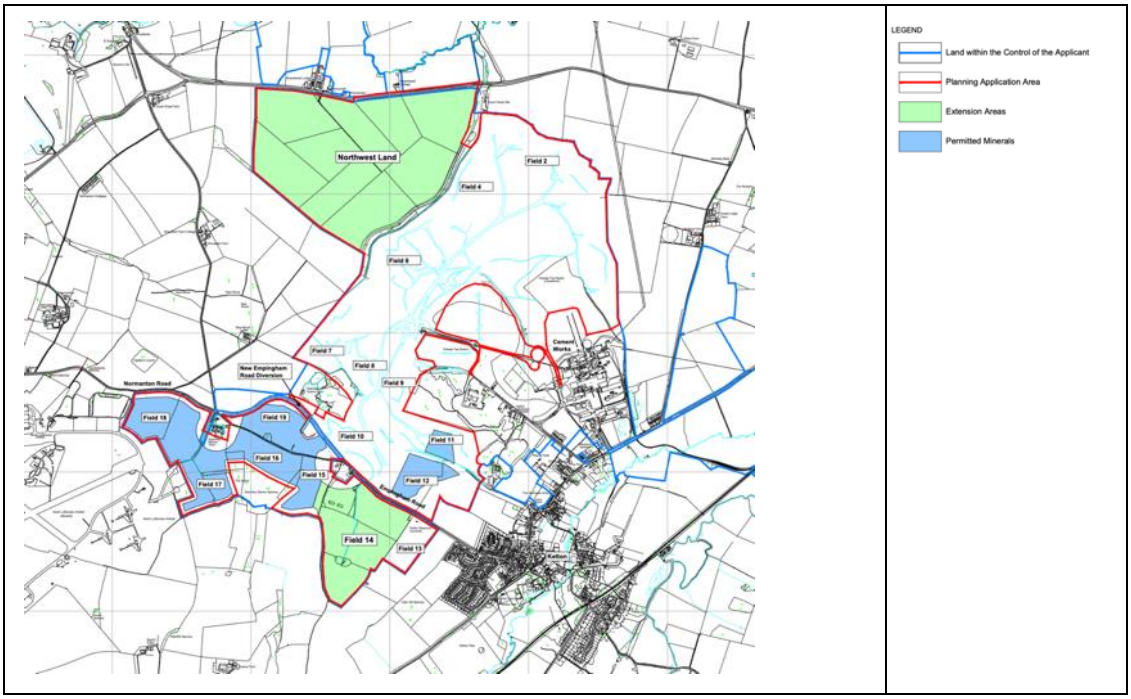

Figure 1 – The Site

1.12 Access to the Works is currently from the A6121 at Ketton, but under these proposals, a new access is to be constructed on the A606 at Shacklewell. This will become the new site access for all HGV traffic.

GENERAL

1.13 The existing quarry (see Figure 1) occupies land in the parishes of Ketton, Tinwell and Edith Weston. The two extensions sit in Ketton (Field 14) and Empingham (NW Land) parishes.

1.14 The planning application area covers nearly 560 hectares but most of this comprises the existing quarry. In terms of the proposed mineral extraction areas, the extensions comprise:

- Field 14 – 39 hectares
- NW Land – 111 hectares.

1.15 This larger application area has been proposed (see the red line on Figure 1) so that, should planning permission be granted, a new set of planning conditions will be applied to the entire mineral working area, making it easier for everybody to understand the standards to which the Quarry should be operating.

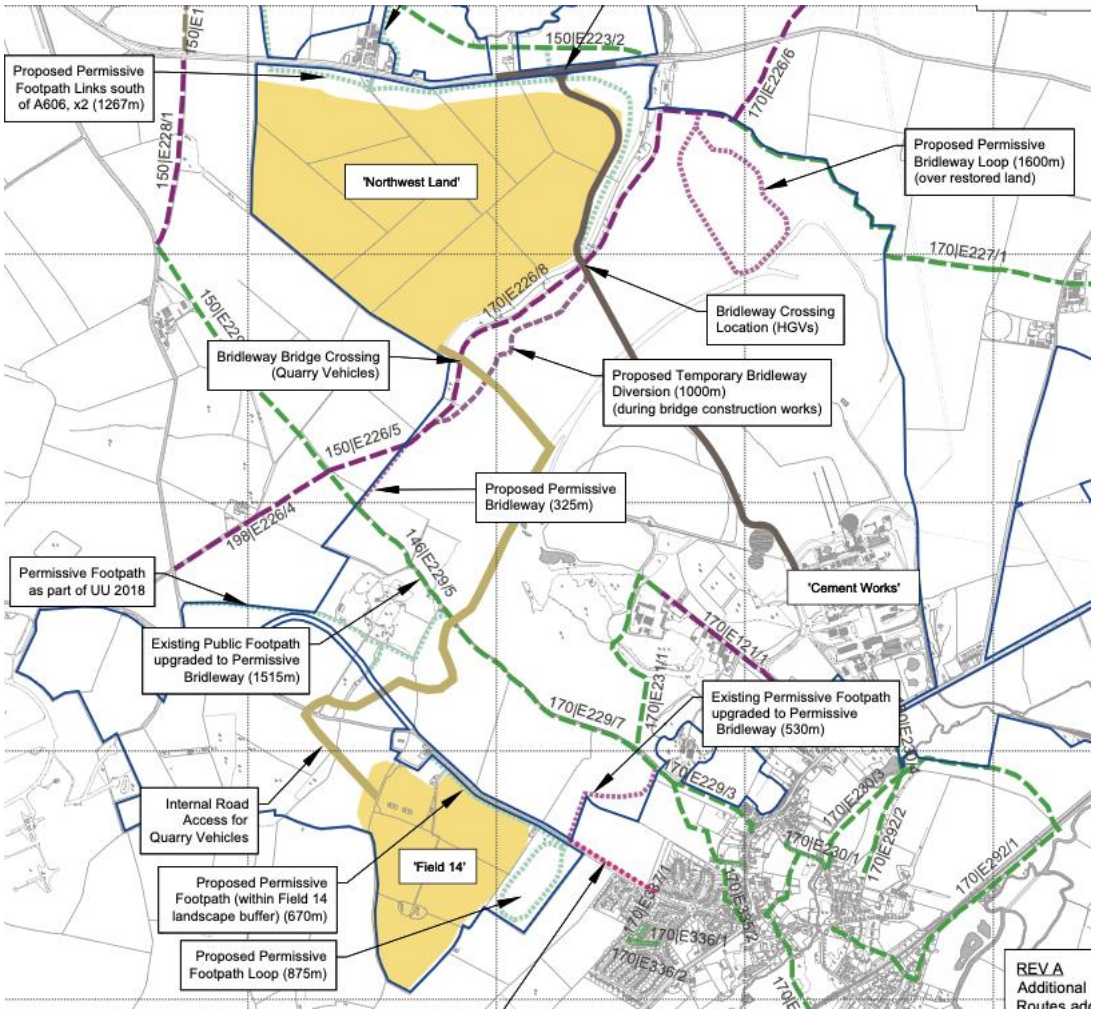

Figure 2 – Public Rights of Way

LOCAL ROAD NETWORK

1.16 Road access to the Works and Quarry is via the A6121, High Street at Ketton. Access is gained via Ketco Avenue and Pit Lane. 95% of the Works HGV traffic is distributed via the A1, meaning HGVs travel through Tinwell and, to a lesser extent, Ketton villages.

PUBLIC RIGHTS OF WAY

1.17 Several public rights of way (PROW) occur around the Quarry see Figure 2). Most notable are: -

- E229 – footpath across the existing quarry
- E226 – bridleway around the northern limit of the existing quarry.

1.18 Bridleway E226 will be affected by both the proposed internal quarry access to NW Land and the proposed new Works access. Crossing points are therefore proposed, with a bridge to take the internal quarry haul road under the existing bridleway and an at-grade crossing where the bridleway crosses the tarmacked Works access road.

WATERCOURSES

1.19 There are a small number of generally dry agricultural drains in parts of the extension areas but no other water courses.

1.20 Offsite, to the North, is the River Gwash and a stream that originates in Shacklewell Hollow. To the south, there is the River Chater that runs through Ketton.

1.21 The limestone geology of the areas generally means that the land is very free draining, hence the lack of notable water courses on site.

LOCAL POPULATION CENTRES

1.22 Ketton village sits closest to Field 14 (being 300m) north of Wytchley Road/ Wootton Close. NW Land sits closer to Empingham being 950m from Empingham.

1.23 The countryside around the Quarry contains scattered farms and occasional residential properties. Notable amongst these are scattered residential properties along the A606 at Shacklewell (closest to NW Land) and Wytchley Warren Cottages/Wytchley House on Empingham Road (closest to Field 14).

1.24 The working scheme has been designed to maintain a minimum 100m standoff between residential properties and the limits of extraction for both quarry working areas.

TOPOGRAPHY

1.25 The existing quarry sits at approximately 65m aOD.

1.26 Field 14 rises from circa 85m aOD closest to Ketton village, rising to 95m aOD at its northern edge. A dry valley rises from the eastern edge of

Field 14, nearest to Ketton village, rising north-westwards before levelling out in the centre of Field 14, at 85m aOD.

1.27 NW Land is a gently rolling hill, rising from the A606, climbing to a maximum of 95m aOD, before falling away to bridleway E226 at 70m aOD. This rolling landform has influenced the phasing scheme for NW Land as it provides a natural screen for the early extraction phases in this extension area.

1.28 The centre of Empingham village sits at 70m aOD.

1.29 The northern edge of Ketton village sits at 60m aOD.

1.30 Both villages sit below the level of the proposed quarry.

LAND USE.

1.31 The two extension areas comprise land in predominantly arable use. A small area of grazing occurs on Field 14 and a private airstrip sits in the western part of NW Land.

2 Development Proposals

OVERVIEW

2.1 The main purpose of the development is to provide high-carbonate limestone and clays to the Works for cement production. Cement has been produced at Ketton for 100 years, but the current permitted reserves will be exhausted by 2033.

2.2 Two quarry extensions are proposed that will allow quarrying to continue up to circa 2060.

2.3 The development also includes a new Works access road onto the A606 Stamford Road at Shacklewell and is likely to be built in circa 2032.

2.4 No changes are proposed to the Works, the proposals relate to the quarry and access only.

2.5 As part of the mitigation works, a bridleway bridge is proposed to allow internal quarry traffic to pass beneath the bridleway. A bridleway crossing is also proposed over the new Works access.

KETTON CEMENT WORKS

2.6 No changes to existing works other than the new access are proposed.

GEOLOGY

2.7 The British Geological Survey (BGS) show that the extension areas contain the key components required by the Works, which are the Upper Estuarine Series (also known as the Rutland Formation), the Upper Lincolnshire and the Lower Lincolnshire Limestone. The rocks dip gently to the east, generally meaning that older rocks outcrop to the west, and younger rocks outcrop to the east.

2.8 Field 14 is underlain by Blisworth Limestone, which is partly covered by a blanket of glacial Boulder Clay. The Figure below shows the geology exposed in Field 12 (next to Field 14) showing the thin Blisworth limestone overlying clays, which in turn sit on top of the Lincolnshire limestone.

2.9 The Lincolnshire Limestone provides most of the kiln feed and is the main source of calcium carbonate. It is present across both NW Land (at the surface) and Field 14 (below the overlying clay).

Figure 3 – Cross Section Showing Geology

2.10 The cement-making process primarily requires a blend of high carbonate limestone and silica.

2.11 The full geological sequence is not present in NW Land. Furthermore, the high carbonate limestone in Field 14 is buried beneath the clay reserves. Therefore, both areas must be worked simultaneously to provide a steady and consistent feed of raw materials of both limestone and clay, necessary for the kiln feed. The extraction sequence is therefore designed to blend the clay and limestone. Without this blending, it would not be possible to make cement at Ketton. This is why two quarry extensions are proposed.

PROPOSED SITE ACCESS

2.12 A new Works access is proposed running north from the Works, across the existing quarry, across bridleway E226, and around the eastern perimeter of NW Land. This will join a new roundabout to be constructed on the A606 at Shacklewell.

2.13 Following representations over several years from RCC, Heidelberg Materials was asked if it could divert its traffic away from Tinwell.

2.14 Heidelberg has not, until 2020, had access to any other suitable roads and the country lanes between Ketton and Empingham are mostly subject to a weight restriction, preventing HGV use. However, in 2020, the acquisition of NW Land provided the first opportunity for direct access to the A606 at Shacklewell.

2.15 The existing access routes via the A6121 are, in highway terms, acceptable as there is plenty of spare capacity and there is no significant accident history that would prevent their use. However, the Council considered there to be an amenity issue from HGVs passing through the centre of the village.

2.16 The proposals therefore include the creation of a new 3km tarmacked access road from the Works, north, through the NW Land, to a new roundabout on the A606 at Shacklewell. Once open, Works HGV traffic and some staff vehicles would use this. This would mean Works HGV traffic would no longer pass through the villages of Tinwell and Ketton.

2.17 If permitted, the new access is likely to be constructed in circa 2033-5

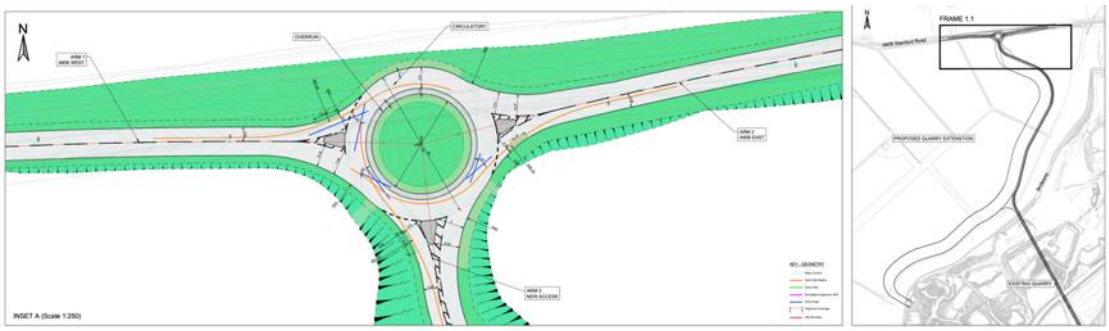

Figure 4 – Proposed roundabout on the A606 at Shacklewell.

HEDGES, WOODLANDS AND FIELD BOUNDARIES

2.18 Some hedges and small woodland blocks on Site will be removed as part of the mineral extraction. This will be done on a progressive basis as each phase is worked.

2.19 Perimeter hedges and trees will be retained. Where these peripheral hedges are currently maintained at circa 1.5m high, they will be allowed

to grow taller (from 2024/5) and will be thickened up with planting behind to provide a denser screen.

2.20 Alongside the A606, low (3m high) bunds will be created and planted in Phase 1. These trees will then have 10-15 years of growth before the workings in NW Land break through the current skyline. By that time, the growth will screen the workings from views, particularly from Empingham.

MINERAL EXCAVATION PHASING

2.21 Two working schemes are proposed, one for Field 14 and one for NW Land. The phasing sequence is shown in the figures below.

Field 14

2.22 Field 14 is worked in an anti-clockwise sequence from its northwestern corner, near Wytchley House. Mineral extraction is expected to progress from the existing workings into Phase 1, in C2032, as a logical extension.

Figure 5 – Field 14 Phasing

2.23 The initial development of Phase 1 will be the most prominent activity in Field 14. Overburden stripped from Phase 1 will be placed into a long-term temporary store on the proposed Phase 5 area to create a 3-5m high, grassed bund, adjacent to Empingham Road. To screen this the surrounding hedges will be allowed to grow taller, especially alongside Empingham Road. By the time Phase 1 is stripped, the hedgerows should be taller than the proposed bund and hide its construction.

2.24 As part of the Phase 1 development work, a separate 3m high screening bund will be created to protect properties at Wytchley Warren

Cottages/Wytchley House. This bund will be seeded and planted. The bund will be constructed on the opposite side of two existing mature tree belts so that the construction of the bund itself should not be overly visible from those properties. (see Figure 6). The Reg' 25 Response makes revisions to the Paradise Field area, to protect more of the ridge and furrow and a small plantation of Giant Redwood trees. This has resulted in the extraction limit and screening bund moving farther south and further away from Wytchley Warren Cottages.

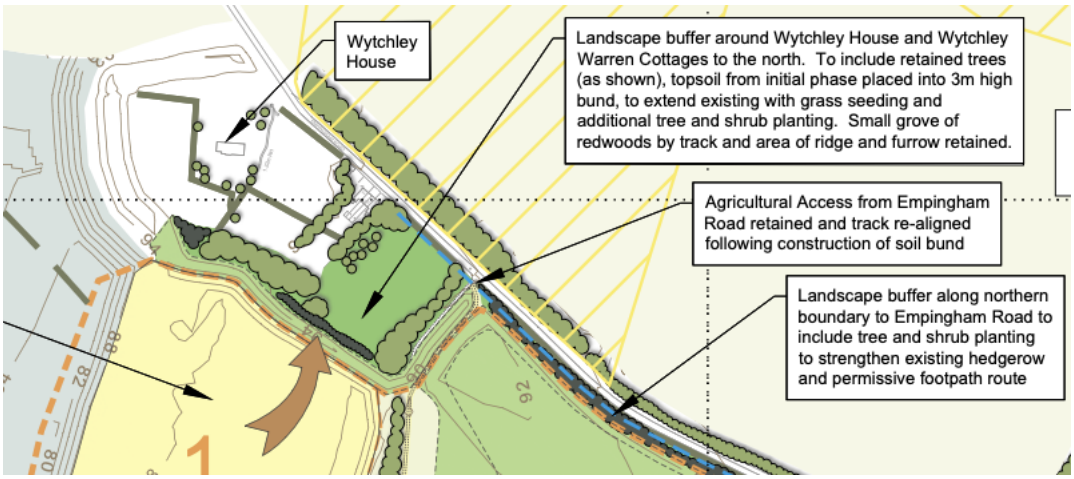

Figure 6 – Proposed bund at Wytchley House/Cottages.

2.25 Mineral extraction will progress by directly placing overburden from subsequent phases into the earlier, worked-out, phases as part of the restoration works. Clays will be extracted and delivered to the Works. As the underlying limestone is exposed, it will be intermittently extracted. This is likely to occur on a campaign basis for 6-8 weeks each year.

2.26 During Phase 4, the temporary bund on Phase 5 will be removed and used to restore Phases 2-4 of Field 14, enabling Phase 5 to be worked out.

2.27 Clay working will be a continuous operation in Field 14. However, the clay does not require blasting and is worked by an excavator simply digging it from the face and loading it into dump trucks.

2.28 Once workings have progressed into Field 14, the main focus of limestone extraction will be in the NW Land. This intermittent working of limestone in Field 14 means that blasting in the vicinity of Ketton village will only occur intermittently throughout the year. (This may be done as an annual campaign over circa 2 months each year.) This compares to the current operations where blasting takes place weekly throughout the year.

NW Land

2.29 NW Land will be the main source of limestone for cement making. NW Land contains no clay, and the overburden is restricted to a thin soil layer that sits on top of the limestone. This means that unlike Field 14, there is very little overburden to strip. The Reg' 25 Response makes revisions to the northern limit of phases 7, 8 and 9, to provide a wider stand off to an Anglian Water pipeline that runs alongside the A606. This has resulted in the extraction limit and screening bund moving farther south and away from the A606.

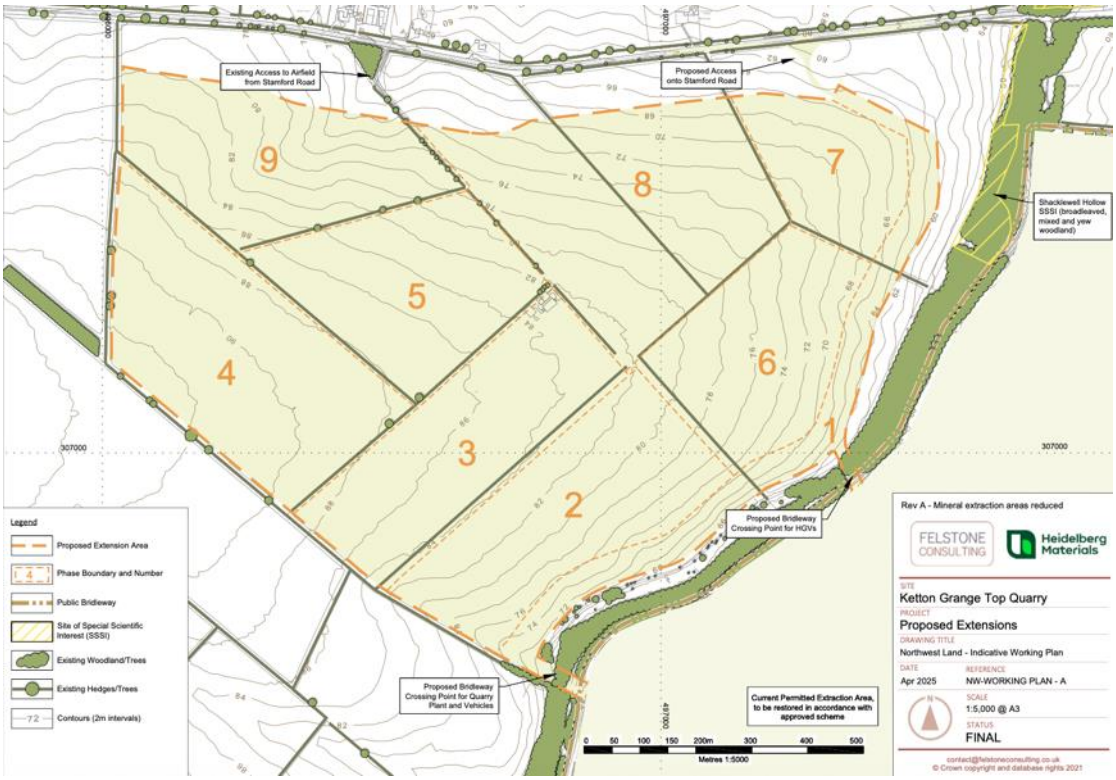

Figure 7 – NW Land Phasing.

2.30 NW Land has been designed to make the best use of the topography to hide the operations. The natural ridge across the field will screen most of Phases 1-6 from views from Empingham and the north by topography alone. By ensuring that the working face is generally aligned away from the north, there should be no views of the workings from the north.

2.31 Phase 1 has been designed to create a running surface for the proposed works access road, recessed approximately 4-5m below the existing ground surface. This will mean that traffic using the new road will not be visible and any noise generated by the vehicles will be contained within the quarry.

2.32 Tree planting and hedgerow improvements are proposed along the frontage to the A606. The existing hedge is circa 1.5m high and these trees will be allowed to grow upwards to screen the construction of screening bunds (see below).

2.33 Soils from phases 1 - 3 will be used to create a series of 3m high embankments in the stand-off between the working area and the A606. Once in place, these bunds will be seeded and planted. The intention is that the combination of tree planting and bunding will provide a screen that will mature over 10 or more years, such that the trees create a 6-10m screen (based on tree growth). By the time excavations progress through the ridge into Phases 7-9, they will completely screen those workings from views to the north e.g. Empingham village.

2.34 The phases will be worked in sequence, allowing stripped soils to be directly placed onto worked-out areas for final restoration. Figure 8 demonstrates how this will work; soils are stripped from the next working phase and used to restore the previous working phases/phases. Figure 8 shows mineral excavation taking place in Phase 4 (yellow), Phase 4 soils being spread onto Phase 3 (see brown arrow) and cultivated. Phase 2 (shown in light green – to the SW of phases 3 and 4) is restored, including tree and hedge planting. The restored agricultural areas then enter a five-year aftercare program to ensure long-term success. This process will continue for each of the phases in turn, through to the completion of Phase 9, the final phase. Aftercare is usually undertaken in conjunction with a local farmer with a vested interest in ensuring the success of the restoration.

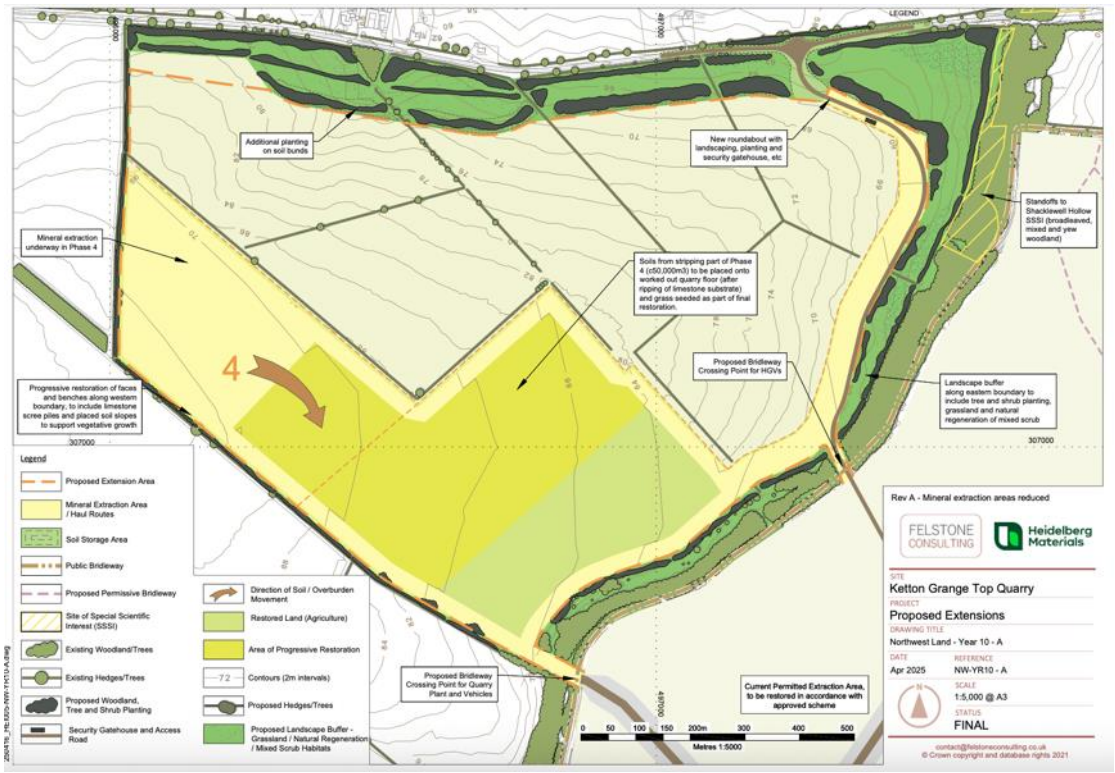

Figure 8 – A606 Landscape works and restoration of Phase 4.

MINERAL RESERVE AND TIMESCALES

Existing Permitted Reserves

2.35 The existing mineral extraction planning permission (see areas coloured blue in the Figure below) was originally granted in 2002. Those permitted minerals are expected to be exhausted by the end of 2032.

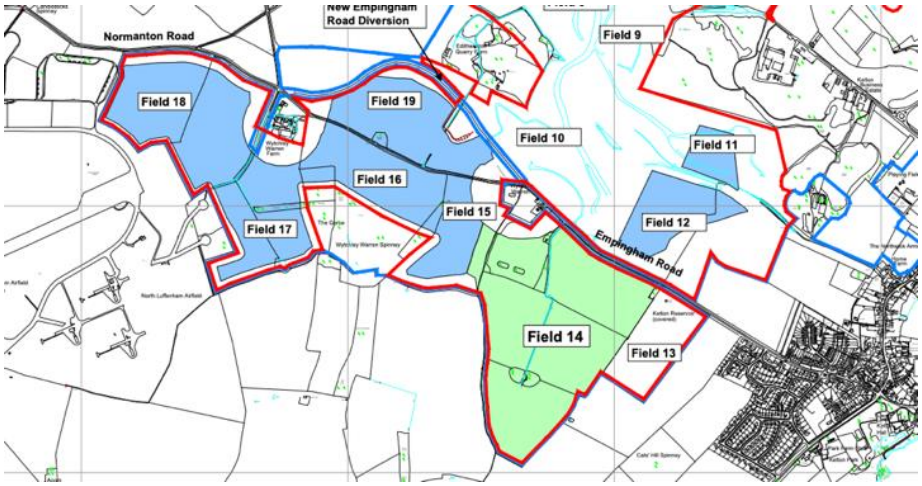

Figure 9 – Existing Permitted reserves (coloured blue)

2.36 Mineral workings are currently in Fields 16/17 and will shortly progress into Field 18 before returning to work in Field 15. Note Fields 11, 12 and 19 are exhausted or close to being exhausted already.

Proposed Quarry Extension Timings

Field 14

2.37 Once permission has been granted, perimeter hedges will be allowed to grow taller, hedgerow gaps will be replanted and selective boundary planting behind key hedges will also be undertaken to strengthen the screening on the boundaries, particularly around Wytchley Warren and Empingham Road.

2.38 New permissive footpaths will be created along: -

- Field 14 next to Empingham Road, to create a new path from Wytchley Warren cottages to Field 13 near the windmill.
- A new circular route in Field 13 (the Windmill field).
- If the highway authority agrees, a mown path will be created along the verge of Empingham Road between Wootton Close and Field 13.
- A new permissive bridleway will be created, upgrading sections of existing permissive paths and path E229 (that crosses the existing

quarry) to create a new permissive bridleway connecting Ketton village to bridleway E226.

2.39 As set out above, once the permitted workings have been completed in Field 15, they will naturally extend into Field 14. This is expected to happen in circa 2032/3.

F14 - Amendments at Paradise Field

2.40 Public consultation highlighted a desire to retain several scattered giant redwood trees at Paradise Field, along with some of the ridge and furrow landform. The F14 plans have therefore been revised at Paradise Field to move the limit of excavation and the screen bund further south.

2.41 The changes between the original proposal and the revised proposals can be seen on the plan extracts in Figure 10.

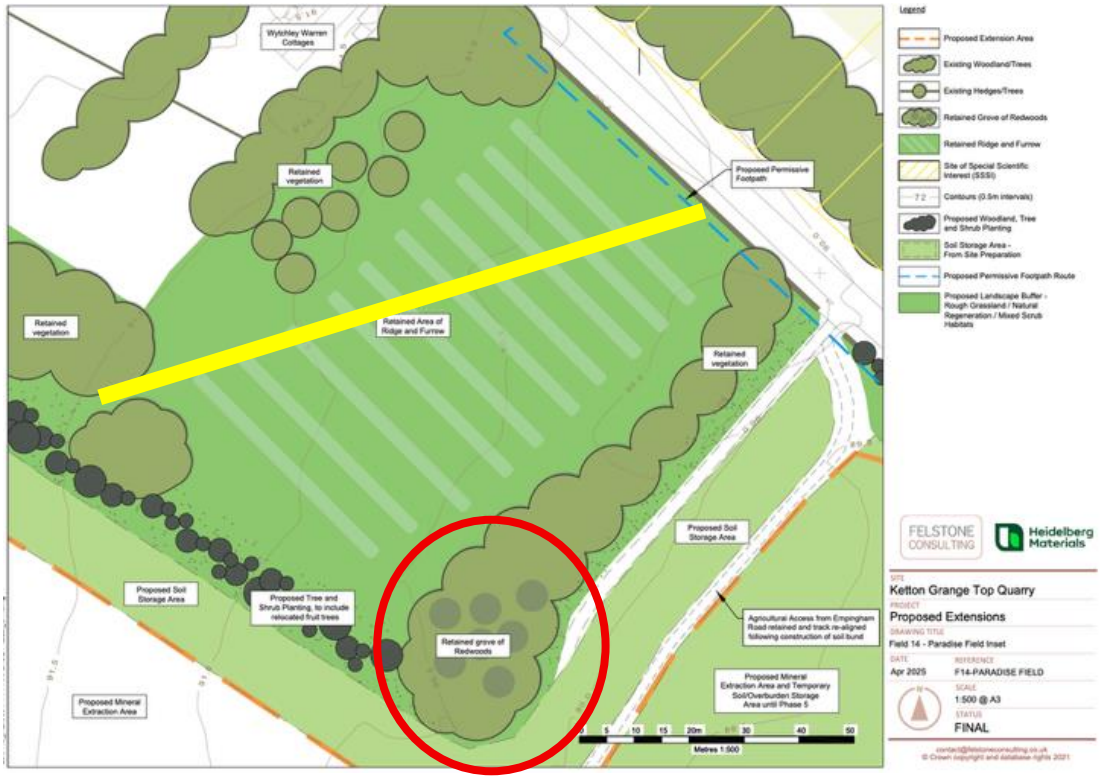

Figure 10 – Field 14 Amended extraction and bund alignment in Paradise Field. The yellow line shows where the previous limit of development stood. The revised bund and extraction limit more than double the amount of ridge and furrow that can be retained along with a cluster of giant redwoods (circled in red) that were previously intended to be removed.

NW Land

2.42 As with Field 14, several years before work starts in NW Land, perimeter boundaries – particularly those facing Empingham and the A606 – will be allowed to grow tall, hedgerow gaps will be planted and new planting behind key hedges will be undertaken.

2.43 The powerline on the western part of NW Land will be diverted around the Site perimeter to allow for later construction of bunds (see below).

2.44 Creation of a new bridleway through the recently restored part of the Quarry (known as area C3).

2.45 As the (already permitted) quarry operations enter Field 15, site set-up work of the quarry will begin in NW Land. The initial work in NW Land will comprise:

- The temporary diversion of bridleway E226.
- Installation of the bridleway bridge over the proposed internal quarry haul road.
- Reinstatement of bridleway E226 back to its original alignment.
- Stripping of Phase 1 and creation of 3m high screening bunds parallel to the A606.
- Tree planting and seeding of the bund.
- Excavation of limestone from Phase 1 to create the foundation for the new Works Access road.

2.46 The two extensions will work together and are expected to provide a further circa 25 years, in addition to the circa 9 years of reserves remaining in the existing permission. On this basis, the extensions would allow operations to continue up to circa 2060.

2.47 NW Land Amendments

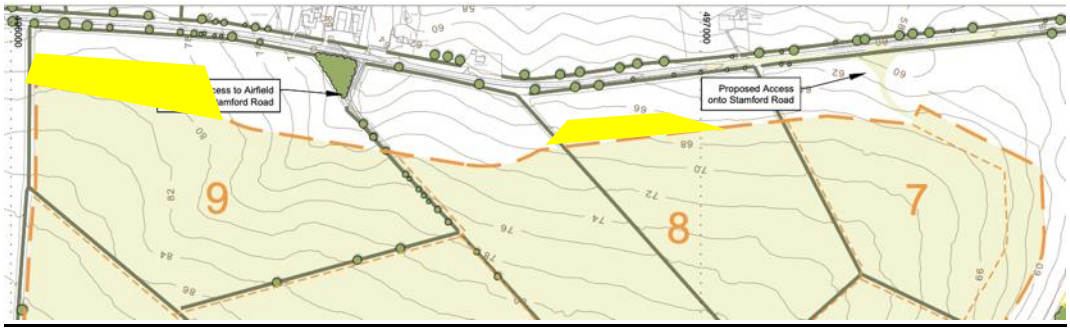

Figure 11 – Northwest Land - Amended extraction alignment.

The yellow areas have now been removed from the quarry area in order to maintain a stand-off from an Anglian Water pipe.

Traffic Generation

2.48 The proposals do not result in any increase in site output. Traffic generated will therefore remain as it is now, with 95% of HGVs heading to and from the A1.

2.49 The Works currently generates approximately 182 two-way HGV movements per day and 184 two-way staff (car/LGV) movements per day.

2.50 The new Works access road will be constructed once NW Land Phase 1 is completed. This is discussed further below.

2.51 The Works will continue to dispatch products via rail, saving between 30-50 HGV movements per train.

Figure 12 – Rail and HGV tankers used by Ketton Works

QUARRY DEVELOPMENT PROCESS & LANDSCAPING

2.52 Soils and overburden are stripped using a 360° excavator and all-terrain dump trucks. Soils and overburden from Phase 1 of both extensions will be placed into store as screening bunds. (5m high in Field 14 and 3m High in NW Land – see sections above).

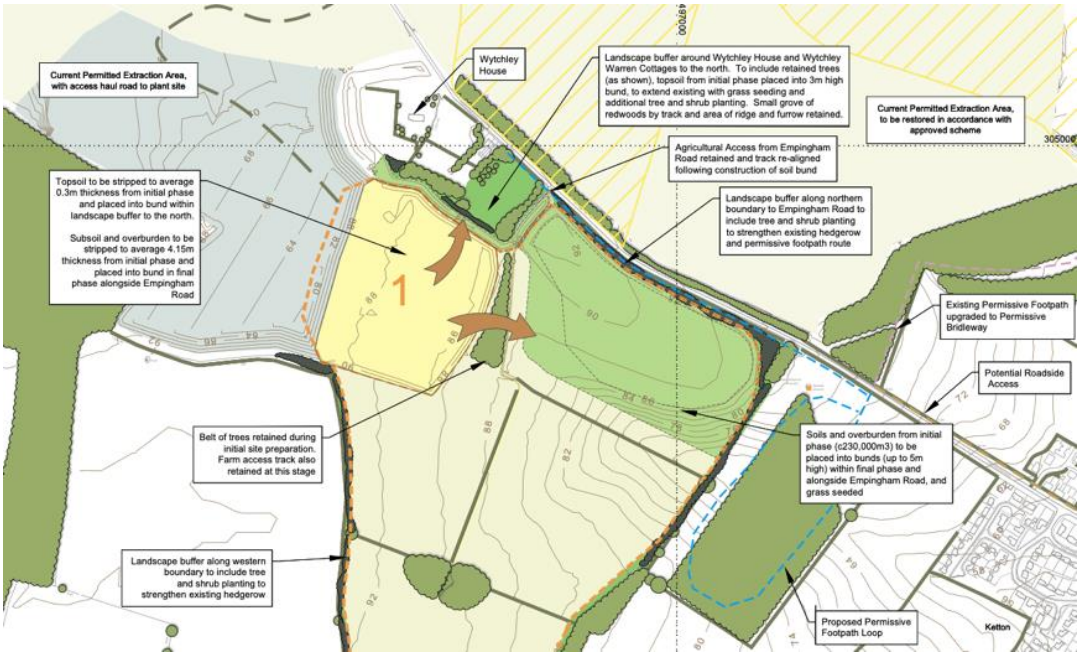

Figure 13 – Field 14 Initial site set-up showing revised limit of extraction and bund

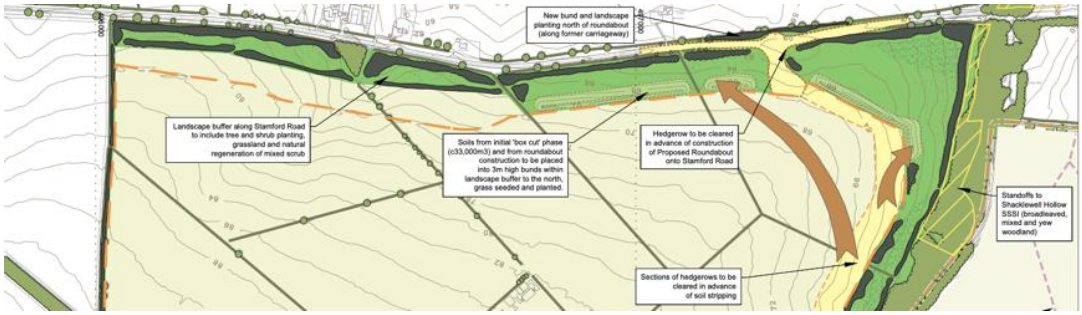

Figure 14 – Initial Site works NW Land showing revised limit of extraction

EXCAVATION EQUIPMENT

2.53 Soils and overburden stripping will be undertaken using a 360° excavator, loading material into all-terrain dump trucks. Storage bunds may also be shaped and graded using small, low-ground pressure dozers.

2.54 Mineral extraction operations will use larger 360° excavators and front-end loading shovels. A combination of rigid and fixed-body dump trucks will be used to transport clay and limestone from the working face to the Works. Figure 15 below shows equipment currently in use at the working face.

2.55 There are no new items of equipment proposed in the operations.

2.56 Respreading of restoration material will be undertaken using similar equipment.

2.57 Dump trucks will travel on dedicated internal haul routes and will be directed to travel at low speeds. As well as being safer, the low speeds also reduce the potential for dust generation.

Figure 15 – Mobile plant used at the working face.

WATER MANAGEMENT

2.58 The Quarry excavation has been designed to work above the water table so that the excavation does not become flooded by groundwater. Rainwater will still collect in the excavation void from time to time but in most cases, this will soak through the permeable limestone, back into the water table, as it does now. During periods of excessive rainfall, ponding within the quarry may occur. Such ponding will be held within the quarry in a series of drains and sumps. These hold the water and allow it to percolate back to the water table whilst keeping the main operational areas in the quarry. For much of the year, these drains and sumps will be dry.

2.59 One existing sump, near the existing footpath E229 bridge, has now developed into a good wetland habitat. This area is scheduled to be restored to agriculture but following representations during the public consultation, requests were made to keep the area as it is due to its wildlife value. Having reviewed the plans, the proposals include the retention of this wetland as part of the final restoration of the Site because of its biodiversity value.

PUBLIC RIGHTS OF WAY

2.60 The installation of the bridleway bridge will require a temporary diversion of the current bridleway whilst the bridge is built. Figure 16 shows the temporary diversion route proposed for E226 whilst the bridge is built in circa 2032. By that time, the part of the quarry around the diversion route will have been restored.

2.61 Figure 17 shows the proposed at-grade crossing where the bridleway will cross the tarmacked Works access road.

2.62 Once the crossings are in place, bridleway E226 will be returned to its original route.

2.63 As part of the Reg 25' Response, Heidelberg Materials has reviewed its rights of way plans and has added further paths in the vicinity of Shacklewell and the A606. A new permissive route will be created between the quarry landscaping and the A606 to provide an off-road route that will connect to bridleway E226. In addition, on the north side of the A606. Figure 18 shows this new route.

2.64 Heidelberg Materials has also reviewed the timing of when new routes can be changed from being permissive and be added to the definitive paths plan to make them statutory rights of way.

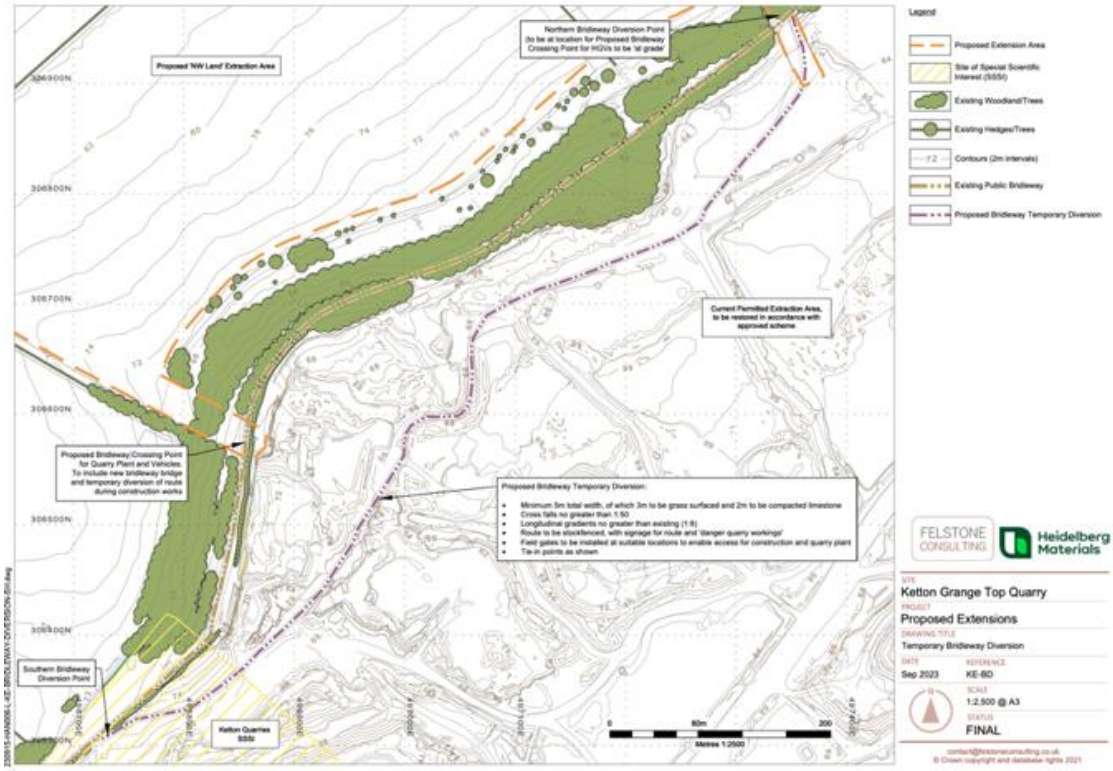

Figure 16 – Proposed Temporary Bridleway Diversion

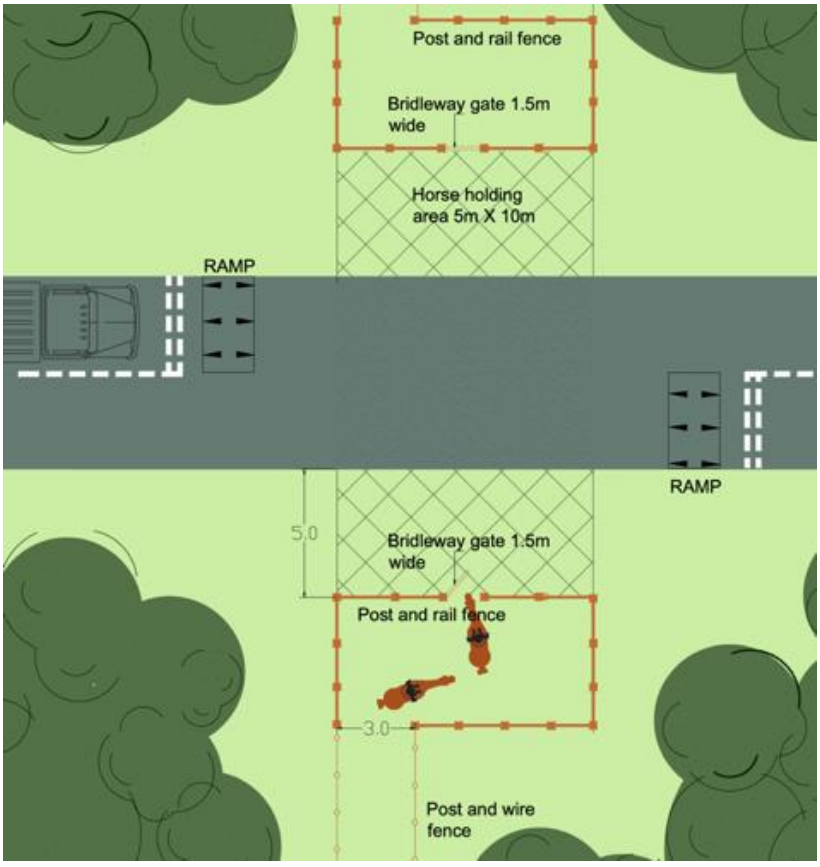

Figure 17 – Proposed Bridleway Crossing over Works Access.

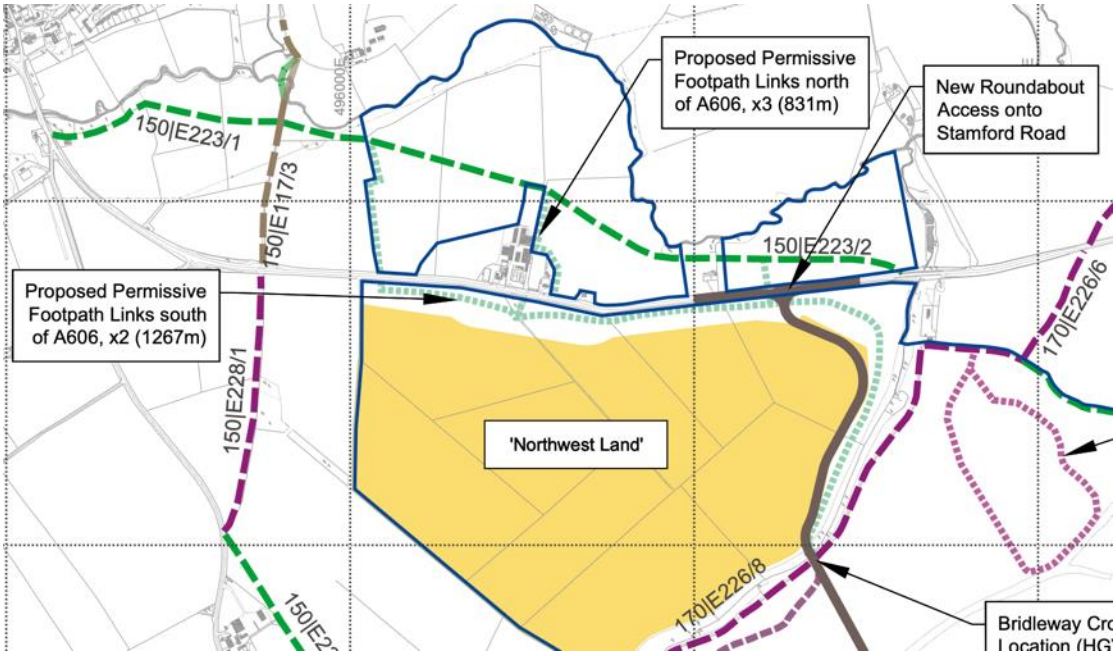

Figure 18 – Proposed Permissive Paths Connecting Empingham to Bridleway E226.

RESTORATION

2.65 The proposed restoration scheme continues the existing theme of reinstating agricultural uses but incorporating new biodiversity such as limestone grassland, woodland and hedgerows as well as smaller localised wetlands/ephemeral ponds.

2.66 Additional tree planting to strengthen existing hedgerows will be undertaken before any soil stripping works.

2.67 NW Land will return to arable use, whilst Field 14 will become grassland suitable for grazing and biodiversity. This is necessary because the excavation in Field 14 is much deeper than NW Land and as a result, the final gradients on the edge of the excavation will be too steep for planting crops.

2.68 As set out above, the restoration will incorporate an extensive network of bridleways and footpaths around the Site.

2.69 Aftercare will be provided for 5 years following restoration to ensure that the establishment of the final restoration works is successful. Habitat areas will be managed for longer periods to match their restoration aims.

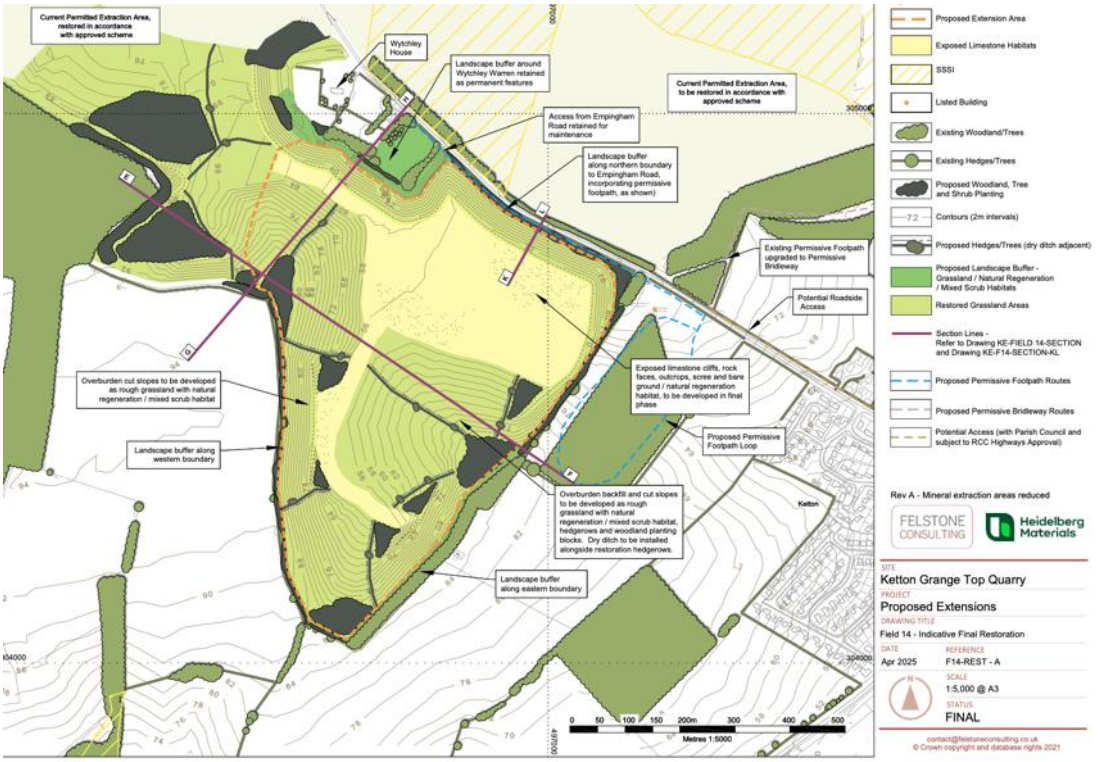

Figure 19 – Final restoration Field 14 showing amended limit of extraction

Figure 20– Final restoration NW Land showing revised limit of extraction

2.70 Restoration will be undertaken progressively as each working phase is completed. In this way, by 2060 most of the Site will have been restored except for the final phases.

2.71 It should be noted that the restoration scheme does not require the importation of any fill from external sources.

NEED

2.72 Cement has been made at Ketton for 100 years. Before that, quarrying was undertaken to produce stone for the local buildings as well as prestigious structures such as Burley House, Leicester Clock Tower and several of the Cambridge colleges.

2.73 The Works is one of only 11 cement producers in the UK, accounting for between 10-15% of the UK cement supply. Cement is used in almost every construction project, and there are very few reliable alternatives. Therefore, the importance of keeping the Works operational for the longer term is significant for the UK construction industry.

2.74 The majority of the cement produced is sold to the Midlands, eastern and southern England, most notably London, where Heidelberg Materials has a cement railhead at St Pancras Station. Ketton Works sends 2-3 trains per week to deliver cement into the heart of the capital.

2.75 Locally, the Site directly employs approximately 240 people, although it is estimated that over 3,000 people derive at least part of their livelihood from the Works, whether as a direct employee or as an employee of companies that buy from or supply services to the Site.

2.76 The Works is one of the top five largest employers in the county and is, by far, the largest non-domestic rate payer in the county. Each year it pays approximately £1.5 million in rates, amounting to 15-20% of the non-domestic rates income in Rutland.

2.77 The Works is therefore important nationally for cement supply and locally for employment and its contribution to public funds.

HOURS OF OPERATION

2.78 There are no proposed changes to the hours of operation for Grange Top Quarry. No changes are proposed to the hours of operation for the main cement works. Those hours are different to those applied to the quarry operations. The mineral excavation, processing and restoration operations in the Quarry will be restricted as follows: -

Table 1 - Hours of Operation

Operation	**Mon'- Fri**	**Saturday**	**Sunday**
Extraction & transportation of limestone and clay within the quarry	0700-1900	0700-1300	0700-1300 on three Sundays/bank holidays only - per calendar year – subject to prior notification to the planning authority
Blasting	1000-1600	Not allowed	Not allowed
Soil stripping, overburden removal or placement within 200m of the nearest point of an occupied property.	0900-1700 No operations in the dark	Not allowed	Not allowed
Essential maintenance work	No restriction - work to be undertaken without causing nuisance at nearby residential properties as a result of noise or light.		

EMPLOYMENT

2.79 The Works employs 240 people, some based at the Site and others based remotely at other offices or as hauliers, making Ketton one of the top employers in the county.

2.80 In addition to the direct workforce, many skilled local contractors also provide specialist services, including landscape maintenance contractors, earthmoving contractors, cleaners, mobile plant engineers and electricians.

2.81 Extending the life of the Site will therefore retain all these existing roles and continued input to the local economy in terms of wages, materials, services and business rates.

3 Planning Policy

3.1 Planning legislation requires that development proposals must accord with the Council's development plan unless material reason exists to depart from that plan.

3.2 The development plan at Ketton comprises several documents produced by the county council, as well as relevant neighbourhood plans such as that produced by Ketton and Tinwell parishes.

3.3 The development plans set out where different types of development will be acceptable and also the environmental thresholds that must be adhered to for the development to be acceptable. The overarching aim is to ensure that development is undertaken in a sustainable way.

3.4 Rutland County Council's Mineral Core Strategy and Development Control Policies (October 2010) identify an area of search for an extension to Grange Top Quarry. Policy MCS 4 confirms that planning permission for quarrying in the area of search, providing the proposals achieve several environmental aims.

3.5 The proposed extensions sit within the area of search (coloured green and red on Figure 21 below). The emerging Rutland Local Plan proposes a similar allocation.

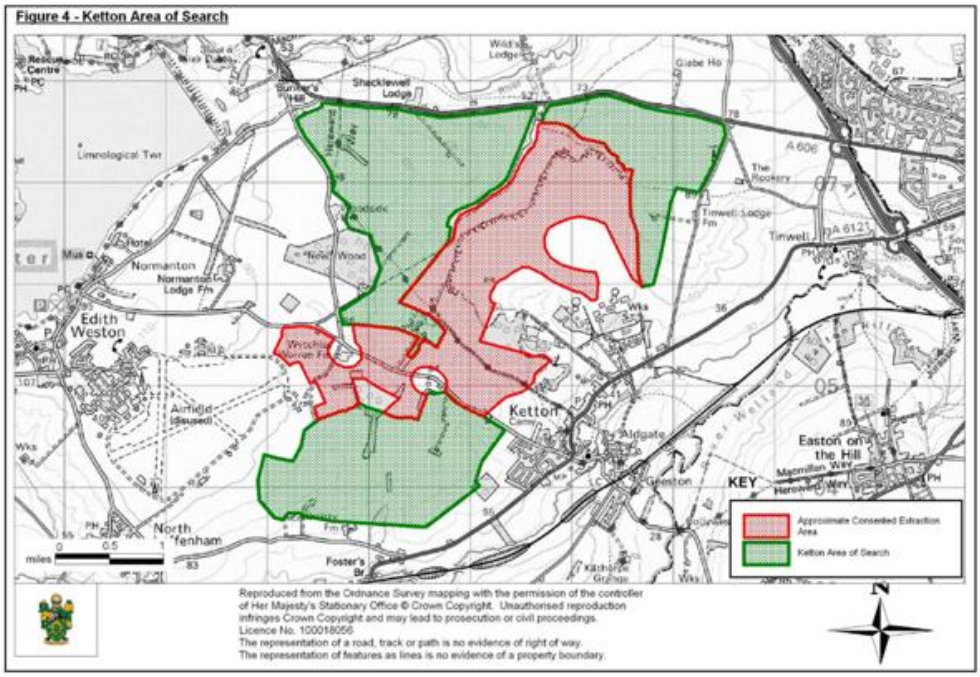

Figure 21 – Ketton area of search

3.6 The ES sets out detailed reports on the relevant environmental aspects. In preparing the proposals, environmental impacts have been assessed and the plans revised and altered to ensure that the submitted scheme accords with the aims of the policies and is environmentally acceptable.

3.7 The environmental impact assessment confirms that providing appropriate mitigation measures are employed, the quarry development will accord with both national and local policy.

4 Environmental Effects

BLASTING AND GROUND VIBRATION

4.1 Quarry blasting can cause ground vibrations. Government guidance sets out appropriate limits to ensure that such effects are acceptable and remain well below levels where damage might occur.

4.2 Heidelberg Materials monitors its blasting activities and Vibrock has investigated the likely effects of blasting and ground vibrations arising from the extensions.

4.3 Vibrock's report makes several recommendations to ensure that such effects do not generate levels of ground vibration that exceed recognised limits defined in current guidance.

4.4 For residential properties, a blasting limit of 6mm PPV has been set, which is half the limit recommended as safe by the government. The report also sets out recommended blast sizes to ensure the suggested limits are not exceeded. Details of limits are set out in the schedule at the end of the document.

4.5 An agreement has also been reached with Anglian Water to reduce the blasting limit above its pipeline alongside the A606, from 50mm down to 25mm PPV.

ECOLOGY

4.6 A 'Biodiversity' assessment has considered the impact of the proposed development on ecological features of value, including potential effects upon statutory and non-statutory designated sites, habitats of nature conservation interest, and legally protected and notable species. An Ecological Update Report has also been prepared by Heatons, as part of the Reg' 25 Response, because over three years have passed since the original ecological surveys were undertaken. This was done to assess whether any significant changes had occurred.

4.7 The existing quarry is already permitted, and restoration works are ongoing, with over 19,000 trees planted in 2022 alone. A range of habitats is already being created on land that was previously largely devoid of biodiversity because of agricultural uses.

4.8 The existing permission has already created areas of woodland, calcareous grassland and newer habitats linked to the quarry faces. An

area of wetland habitat has also naturally regenerated at the northern limits of the existing quarry. This habitat was to be replaced by agriculture but is instead going to be retained as part of the proposals now put forward, because of its habitat value, particularly for bird species.

4.9 The ecological update assessment has shown that the original assessments remain relevant and accurate. However, the project is a long-term proposal and ecology is likely to change to some degree over its life. For this reason, a Construction Ecological Management Plan (CEMP) is proposed that will manage ecological matters as the Site progresses.

4.10 Extension areas are broken up by managed hedges and small copses.

4.11 There is one SSSI within the existing quarry (Ketton Quarries SSSI) with Shacklewell Hollow and north Luffenham Quarries SSSI's beyond the Site boundary. Further designated sites, most notably Rutland Water, sit remote from the Site but have also been considered in the assessment.

4.12 Specific assessments of great crested newts, birds, reptiles, bats, and badgers have been undertaken.

4.13 Mitigation measures have also been put forward in the design process. These include providing a Construction Ecological Management Plan (the CEMP) that sets out a framework for dealing with ecological issues for the life of the Site. The CEMP will be enforced through a planning condition.

4.14 The overall approach of the design has followed a hierarchy of avoiding impacts, reducing unavoidable effects and compensating for residual significant effects.

4.15 The most notable negative effects of the development will be the removal of trees and hedges. However, the landscaping and restoration measures more than offset that loss.

4.16 Biodiversity net gain calculations show a biodiversity net gain of approximately circa14% for habitat and hedgerows and 84% for water course units. This is well above the 10% required in legislation.

4.17 The following tables summarise the effects on each area.

Table 2 - Ecological Effects Field 14

Important Ecological Feature	Potential Impacts and Effects	Avoidance, Mitigation Measures and Enhancement	Mechanism by Which Measures and Secured	Residual Effects
International Statutory Sites	No impacts.			
Statutory Sites	No direct impacts. Negligible minor indirect impacts.	Soil bund implementation, acts as a screening buffer.	CEMP secured through planning condition.	No significant effect.
Non-Statutory Sites	No impacts.			
Priority Habitats	Phased loss of woodland habitat.	Advanced planting of woodland along the northern boundary. Phased creation of woodland across the area.	Biodiversity Net Gain Report. LEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.
Woodland (BL SN, BL PL and Mixed PL)	Phased loss of woodland habitat. Indirect impact due to compaction / damage of root system.	Advanced planting of woodland along the northern boundary. Phased creation of woodland across the area.	Biodiversity Net Gain Report. LEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.
Grassland (Improved and Semi-Improved)	Phased loss of grassland habitat.	Phased creation of similar ecologically valuable habitat (neutral grassland).	Biodiversity Net Gain Report. LEMP secured through planning condition.	Minor beneficial effect.
Hedgerows (SP and SP with trees)	Phased loss of areas of hedgerow habitat. Indirect impact due to compaction / damage of root system.	Phased creation of species-rich hedgerow with trees. Retained will be enhanced by increasing number of native woody species and reducing gaps.	Biodiversity Net Gain Report. LEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.

Important Ecological Feature	Potential Impacts and Effects	Avoidance, Mitigation Measures and Enhancement	Mechanism by Which Measures and Secured	Residual Effects
Great Crested Newt	Phased loss of areas of suitable habitat.	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across the area. Strengthening of connectivity into wider landscape.	LEMP and CEMP secured through planning condition.	Minor beneficial effect.
Bats (Roosting)	Phased loss of areas of suitable habitat.	Advanced planting of woodland along the northern boundary. Phased creation of woodland across the area.	LEMP and CEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.
Bats (Commuting / Foraging)	Phased loss of areas of suitable habitat. Potential fragmentation of commuting and foraging habitat.	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across the Field 14 area. Strengthening of connectivity into wider landscape.	LEMP and CEMP secured through planning condition. Construction in line with BS5837:2012	Minor beneficial effect.
Badgers (and other mammals)	Phased loss of areas of suitable habitat. Potential fragmentation of commuting and foraging habitat.	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across the Field 14 area. Best practice measures detailed within CEMP.	CEMP secured through planning condition.	Minor beneficial effect.
Birds (Wintering and Breeding)	Phased loss of areas of suitable habitat. Potential fragmentation of	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across	LEMP and CEMP secured through planning condition.	Minor beneficial effect.

Important Ecological Feature	Potential Impacts and Effects	Avoidance, Mitigation Measures and Enhancement	Mechanism by Which Measures and Secured	Residual Effects
	commuting and foraging habitat.	the Field 14 area. Strengthening of connectivity into wider landscape.		

Table 3 - Ecological Effects NW Land

Important Ecological Feature	Potential Impacts and Effects	Avoidance, Mitigation Measures and Enhancement	Mechanism by Which Measures and Secured	Residual Effects
International Statutory Sites	No impacts.			
Statutory Sites	No direct impacts. Negligible minor indirect impacts.	Suitable significant buffer of 100m.	CEMP secured through planning condition.	No significant effect.
Non-Statutory Sites	No direct impacts. Negligible minor indirect impacts.	Soil bund implementation.	CEMP secured through planning condition.	No significant effect.
Priority Habitats	Phased loss of minor areas of woodland habitat. Negligible minor indirect impacts.	Advanced planting of woodland along the northern boundary. Phased creation of woodland across the area. Suitable significant buffer of 80m.	Biodiversity Net Gain Report. LEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.
Woodland (BL SN)	Phased loss of minor areas of woodland habitat. Indirect impact due to compaction / damage of root system.	Advanced planting of woodland along the northern boundary. Phased creation of woodland across the area. Suitable significant buffer of 80m.	Biodiversity Net Gain Report. LEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.

Grassland (Improved and Semi-Improved)	Phased loss of grassland habitat.	Phased creation of similar ecologically valuable habitat (neutral grassland).	Biodiversity Net Gain Report. LEMP secured through planning condition.	Minor beneficial effect.
Hedgerows (SP with trees)	Phased loss of areas of hedgerow habitat. Indirect impact due to compaction / damage of root system.	Phased creation of species-rich hedgerow with trees. Retained will be enhanced by increasing number of native woody species and reducing gaps.	Biodiversity Net Gain Report. LEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.
Bats (Roosting)	Phased loss of areas of suitable habitat.	Advanced planting of woodland along the northern boundary. Phased creation of woodland across the area.	LEMP and CEMP secured through planning condition. Construction in line with BS5837:2012.	Minor beneficial effect.
Bats (Commuting / Foraging)	Phased loss of areas of suitable habitat. Potential fragmentation of commuting and foraging habitat.	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across the Northwest Land area. Strengthening of connectivity into wider landscape.	LEMP and CEMP secured through planning condition. Construction in line with BS5837:2012	Minor beneficial effect.
Badgers (and other mammals)	Phased loss of areas of suitable habitat. Potential fragmentation of commuting and foraging habitat.	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across the Northwest Land area. Best practice measures detailed within CEMP.	CEMP secured through planning condition.	Minor beneficial effect.
Birds (Wintering and Breeding)	Phased loss of areas of suitable habitat. Potential fragmentation of commuting and foraging habitat.	Advanced planting of woodland along the northern boundary. Phased creation of suitable habitat across the Field 14 area.	LEMP and CEMP secured through planning condition.	Minor beneficial effect.

		Strengthening of connectivity into wider landscape.		

Biodiversity Net Gain

4.18 The Biodiversity Net Gain calculations for the proposed scheme (both Field 14 and NW land) have been assessed using the DEFRA Biodiversity Metric 4.0 (March 2023) produced by Natural England and the Phase 1 Habitat Map produced as part of the PEA Report (Technical Appendix 1.1). The Biodiversity Metric 4.0 (March 2023) provides an updated way to measure and account for the losses, changes, and gains in biodiversity as a result of development, or changes in land management, and includes a calculation tool to demonstrate these figures.

Table 4 - Biodiversity Net Gain

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	60.10
	Hedgerow units	10.74
	Watercourse units	0.54
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	13.80%
	Hedgerow units	14.91%
	Watercourse units	84.24%
Trading rules satisfied?	Yes ✓	

LANDSCAPE AND VISUAL IMPACT

4.19 The Landscape and Visual Impact Assessment ('LVIA') includes a baseline study of the character and appearance of the existing Site and its surroundings, a study of the landscape and visual characteristics of the proposed development, and an assessment of the residual landscape and visual effects likely to be generated after mitigation has been considered and their significance.

4.20 Overall, there were no significant landscape and visual effects predicted as a result of the proposed development.

4.21 The landscape strategy uses recognised techniques for mitigating potential adverse effects: firstly the direction of mineral working retains the natural screening from the existing topography for as long as possible during the quarrying process; secondly, the treatment of the Site boundaries would encourage taller hedgerow growth in conjunction with new areas of tree and shrub planting; and thirdly, the use of progressive working and restoration would minimise the extent of active quarrying at any single point in time and ensure the creation of new and replacement habitats at the earliest opportunity.

4.22 The proposals have therefore been designed in such a way that would retain and, over time, enhance the distinctive landscape character of the local 'LCA D Rutland Plateau' (Ketton Plateau sub-area Div) area. Although some small areas of woodland, hedgerows and trees would be removed from within the Site, perimeter landscape buffers would be established at the outset of the development, with further additional woodland areas to be restored to replace and extend these elements. Overall, there would be a substantial increase in woodland cover and grassland, with the introduction of new limestone habitats on areas of existing intensively managed agricultural (mainly arable) land.

4.23 In addition, the proposals incorporate additional permissive bridleway and footpath routes within the applicant's landholding and upgrades of existing public footpaths to bridleways. When considered in conjunction with the new roundabout onto Stamford Road and site access, which would remove existing HGV vehicle movements away from Pit Lane to the south, the effects upon access and circulation would be beneficial.

4.24 The effects upon the aesthetic and perceptual aspects of the landscape would be generally limited and the sense of openness would be broadly retained through the progressive working and restoration scheme, ensuring that the character of the settled countryside at this location is safeguarded.

4.25 In visual terms, once the mitigation has been taken into consideration, the proposals would be relatively well concealed from nearby residential and recreational receptors or travellers along the local road network. This also includes horse riders, cyclists and walkers using the existing public rights of way and the new and upgraded permissive routes.

SOILS AND AGRICULTURE

4.26 The existing Site is an arable farm that is cropped mainly for cereals with some very small areas of pasture in Field 14 and an air strip in NW Land.

4.27 A soil resources and agricultural land quality survey was undertaken of 169.3 ha of agricultural land between Ketton and Empingham in February 2022. The land is proposed as an extension to the existing Grange Top Quarry.

4.28 The survey has shown a mixture of mainly shallow loamy soils over limestone and deep, slowly permeable clay soils. The land is principally of subgrade 3b quality due to droughtiness or wetness limitations. Smaller areas are limited to subgrade 3a or grade 2.

4.29 Four soil resources have been identified for restoration use: two topsoils and two subsoil resources.

4.30 The restoration will result in an overall reduction in the amount of arable land in Field 14 where some BMV land will be lost due to the changed topography.

4.31 In NW Land the restoration will recreate arable land across the whole Site, including the former airstrip, resulting in an overall increase in the amount of active farmland compared to now. As the quarry is not extracting the full thickness of limestone, the replaced soils will sit directly onto the limestone as they do now. This will allow the existing land quality to be reinstated.

ARCHAEOLOGY

4.32 An extensive assessment of archaeological features has been undertaken for both extension areas. This has included a review of the archaeological records, a geophysical survey and an extensive trial trenching assessment of the Site involving over 330 trenches (50m x 2m).

4.33 As a result of this, a series of enclosures and remains, thought to be predominantly of Iron or Bronze Age, were identified in the extensions.

4.34 It is therefore proposed to undertake an appropriate archaeological investigation of the Site before mineral extraction. If archaeological remains are identified during these works, an appropriate level of archaeological investigation and recording to mitigate any potential impact on any identified remains will take place.

4.35 Any such works can be secured through the imposition of a suitably worded planning condition agreed with the Council Archaeological Officer. As part of that, a scheme for the assessment of paleo archaeology is submitted as part of the Regulation 25 Response.

4.36 The assessment of indirect impacts on all archaeology within the study area shows that the proposed quarry will have a negligible impact on this heritage resource.

CULTURAL HERITAGE

4.37 A separate assessment has been undertaken concerning the cultural heritage effects of the development. Cultural heritage typically includes sensitive heritage assets such as listed buildings, scheduled monuments, conservation and registered parks and gardens, amongst others.

4.38 The assessment considered those sensitive heritage receptors that may be affected by the proposals.

4.39 The Heritage Impact Assessment identified four designated heritage assets as being potentially susceptible to impact by the proposals.

4.40 These assets comprised:

- The Windmill (Grade II)
- St Andrews Church (Grade II*)
- Site of former manor house and gardens (Scheduled Monument)
- Collyweston Conservation Area

4.41 It is concluded that for the assets in Collyweston, the visual effects of the proposals at over 3km distant will not alter any aspect of their settings. No harm has been identified to the significance of these assets.

4.42 For the windmill, which is located adjacent to the application site at Field 14, the effects of the proposals on the 'backdrop' of the asset when viewed from a distance as well as alteration of the experiential aspects of its immediate surroundings, were found to be the most potentially adverse effects. However, the proposals will not alter the fundamental components of this asset's setting which contribute to its significance – namely its siting on higher ground in order to utilise the prevailing winds. While no harm has been identified to the significance of the windmill, it would be possible to reduce the effects on its setting by utilising appropriate tree and hedgerow screening to maintain its contrasting backdrop in long-range views towards it.

4.43 Therefore, on balance, the effects on heritage assets are not likely to be of a level that would prevent the development from proceeding.

HIGHWAYS

4.44 An assessment of the likely transport effects of the quarry on the A606 considered the existing baseline traffic flows and accident record on the local highway network.

4.45 The Works will continue to make use of its railhead to transport cement to London. Currently, 2-3 trains per week undertake this journey, with each train replacing between 30 and 50 HGV journeys (depending upon train size).

4.46 Unfortunately, most customers are not based near rail handling facilities and the only feasible option for deliveries is by HGV.

Output and new access road

4.47 No increase in output is proposed under these proposals, though Works traffic will eventually use the A606 instead of the A6121 through Tinwell and Ketton villages. This change has been proposed in response to representations from the RCC to improve amenity in Tinwell by removing traffic from Main Street.

4.48 As part of the extension application, a new access on the A606 to the north of the existing Site is also proposed. The existing accesses on the A6121 Stamford Road are to be retained, and traffic use is likely to vary

between the Site access junctions depending on phasing. The proposals will not generate any additional traffic.

4.49 The new road is to be constructed at a lower level in the quarry to screen it and traffic on it from surrounding areas. The road will therefore be built in circa 2033-5 once NW Land Phase 1 has been worked to create the foundation for the new road.

Traffic Generation

4.50 The proposals will not generate any additional traffic from the Works, though they will extend the life of the current traffic flows and will shift the traffic from the A6121 to the A606, as requested by RCC, to remove works traffic from Tinwell.

HGV Routes

4.51 The distribution of HGV traffic is based on existing dispatch data provided by Heidelberg Materials. The data shows that 5% of HGVs would travel west on the A606 Stamford Road, with the remaining travelling onto the strategic road network (i.e. the A1).

4.52 The existing (and future) distribution of HGVs suggests that 5% of HGVs travel west through Empingham, this equates to approximately four two-HGV movements per hour. Given the overall number of movements to the west, the impact on the A606 through the village of Empingham is minimal. Given the lack of any sizable cement market between the Site and Leicester, this split is unlikely to change, as there is no benefit to most hauliers from travelling through Empingham.

4.53 The majority of HGVs travel to the east on the A606 to the A1. There is a modest increase in HGV vehicle movements to the east on the A606 Stamford Road; however, the impact is not considered to be severe. There is no increase in HGV movements using the A1 and consequently, National Highways has raised no objections.

Road Safety

4.54 The A606 Stamford Road is a single-carriageway road subject to the National Speed Limit in the vicinity of the Site. It has a carriageway width of approximately 7.3m and is not street-lit.

4.55 An analysis of recent collision data does not suggest any specific road safety concerns associated with the proposed access point or the roundabout design on the A606 Stamford Road.

Junction Capacity

4.56 A junction capacity assessment shows that the proposed site access roundabout operates with spare capacity in 2030 and 2055, inclusive of background traffic growth and with the addition of the proposed development traffic.

Highways Summary

4.57 It is considered that the proposed development would not have a severe impact on the highway network and is in accordance with relevant policy and design guidance. It is concluded that the proposals are acceptable from a transportation perspective, and it is respectfully recommended for approval by the highway authority.

Road Safety Audit Stage 1

4.58 Rutland County Council's Highways Development Control team requested a Stage 1 Road Safety Audit of the proposed site access roundabout onto the A606. The appropriate road safety reports were undertaken in accordance with GG119 of the Design Manual for Roads and Bridges (DMRB). The Council's highways team subsequently confirmed that there are no further objections in terms of highway safety or amenity associated with the proposed site access.

HYDROLOGY / HYDROGEOLOGY

4.59 The hydrological and hydrogeological settings of the proposed quarry have been assessed based on a variety of mapping, including from the British Geological Survey, Ordnance Survey, Environment Agency database searches and site investigation work undertaken by the applicant.

4.60 Mineral extraction has been undertaken since 1928 at Grange Top Quarry, without unacceptable adverse hydrological or hydrogeological effects. This is mainly due to the quarry operations sitting above the water table.

4.61 NW Land is bounded to the north by the A606 Road, with the River Gwash located 190 m to the north. The eastern boundary is defined by Shacklewell Hollow, which is designated as a SSSI and contains a tributary of the River Gwash. The tributary is fed by springs and seepages.

4.62 Field 14 is located in the southeast of the Application Area, with the River Chater located 1 km to the southeast.

4.63 The Lincolnshire Limestones are the water-bearing strata and sit on top of the Whitby Mudstone. The water table is located low down in the limestone below the quarry floor level. Where watercourses have cut down into the Whitby Mudstone, spring lines can be found, which support features such as the brook in Shacklewell Hollow.

4.64 The extension areas represent a continuation of current site operations and therefore, there is no change from the existing situation of Grange Top Quarry.

4.65 Mineral extraction will be undertaken entirely above the watertable; therefore, dewatering will not be required. The absence of dewatering considerably reduces the risk of impacting nearby sensitive water features.

4.66 Water flow to Shacklewell Hollow will be maintained, as the saturated thickness of aquifer beneath the extraction area will not be reduced.

4.67 No cumulative impacts are anticipated associated with the former and currently permitted mineral extraction.

4.68 The significance of the impact on the water environment during mineral extraction and following the completion of restoration is considered to be 'Minor'.

FLOOD RISK ASSESSMENT

4.69 Flood risks to the Site from all sources are considered to be low and are summarised below:

4.70 The mineral extraction is 'Less Vulnerable' in terms of flood risk, in accordance with the NPPF. Both extension areas are located on relatively high ground, away from watercourses and in areas designated as Flood Zone 1 by the EA. The small area of Flood Zones 2 and 3 that encroach onto the Site are outside of the proposed extraction area. Therefore, development will not impact floodplain storage or alter fluvial flood flow paths.

4.71 Pluvial (i.e. rainwater) flooding is regarded as a very low risk due to any risk being outside the extraction area of NW Land. Incident rainfall will be retained within the quarry void during operation and will be able to infiltrate through the base. A sump will be used where volumes of run-off require it.

4.72 The risk of groundwater flooding is very low due to the highly fractured nature and good drainage characteristics of the underlying limestone and the proposal to work above the watertable.

4.73 Flood risk from reservoir failure is very low for most of the Application Area, with any risk being associated with Shacklewell Hollow, which is not part of the working area.

4.74 The proposed extension is not considered to pose a risk to receptors external to the Site through groundwater, pluvial or fluvial flooding during extraction and post-restoration. This is due to the extension areas being located outside of designated Flood Zones and the good drainage characteristics of the limestone.

4.75 It is considered that the proposed development complies with flood risk policy. The area of Grange Top Quarry identified by the Strategic Flood Risk Assessments as being within a Flood Zone is outside of the proposed working area and therefore, the extension areas would have no impact on fluvial flood risk.

4.76 The Lead Local Flood Authority (Rutland CC) has reviewed the FRA and agrees with the conclusions and are satisfied that the proposal will not result in either on-site or offsite flooding and, therefore, recommend that the planning application be approved unconditionally.

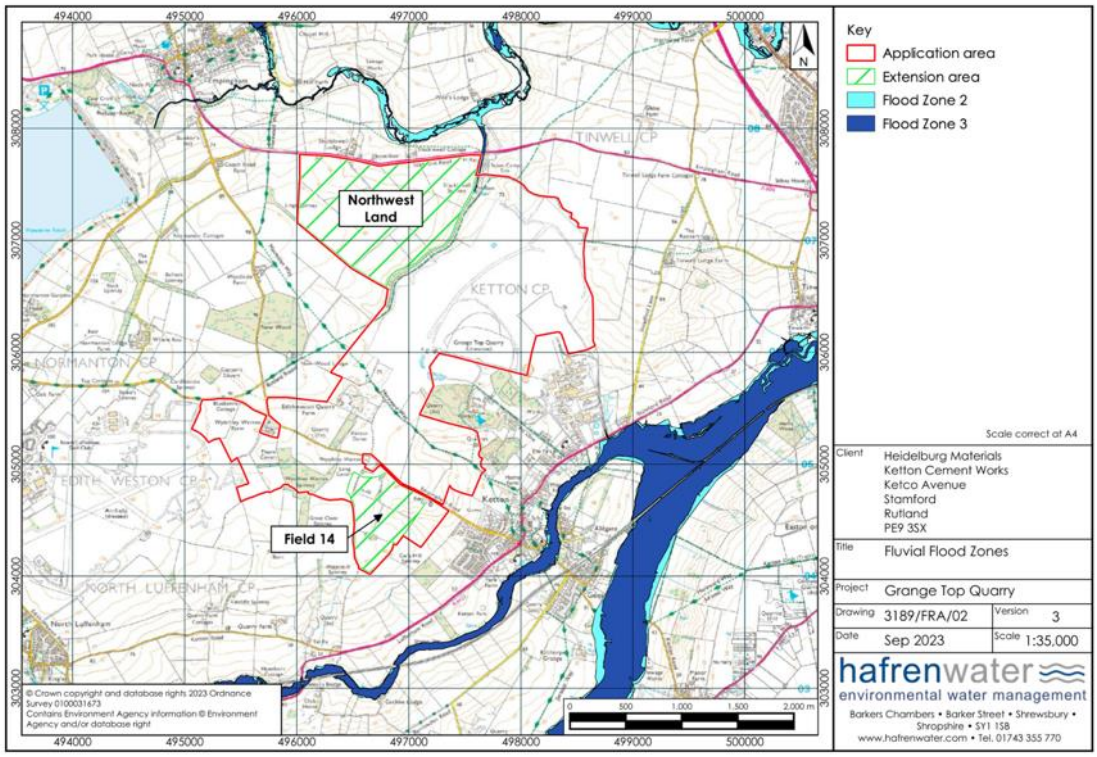

Figure 22 – Fluvial Flood Zones

1

NOISE

4.77 The current guidelines on noise are contained in the government's online document "Planning Practice Guidance (Minerals)", first published in March 2014.

4.78 Following comments from the Environmental Health Officer, further assessment works have been undertaken along the A606 at Shacklewell to reassess the baseline. This further survey work confirmed that the original assessment remains reliable.

4.79 In assessing the likely noise effects of the extensions, existing background noise levels were assessed at multiple locations. Assessments were also undertaken of the noise generated by the existing noise sources in the quarry operations, which will eventually operate in the two extensions.

4.80 Site noise calculations have been undertaken for fourteen locations, taken to be representative of the nearest dwellings to both the proposed working areas.

4.81 As a result of the assessment, noise limits have been proposed at dwellings to ensure that site-generated noise sits below the thresholds set out in the government guidance. The ES contains details of the specific noise limits proposed.

4.82 The use of screening bunds between 3 and 5 metres high is proposed in some locations and assists in both visually screening the Site and reducing noise. These have been included in the calculations.

4.83 Since the proposed operations conform to the advice set out in the Planning Practice Guidance with regard to both routine and temporary operations, it is considered that the Site can be worked while keeping noise emissions within environmentally acceptable limits.

DUST

4.84 Heidelberg Materials is seeking consent to extend Grange Top Quarry into two areas beyond the existing site boundary: NW Land and Field 14. The proposed extensions involve the phased extraction of approximately 1.4 – 1.6 million tonnes per annum over 25 - 30 years.

4.85 A dust and air quality assessment was carried out to consider the potential 'nuisance' or 'disamenity' dust impacts at residential and ecological receptors within 400 m of the proposed extension. The assessment also considered the potential impacts on the Air Quality Objectives (AQOs) for PM10 and PM2.5.

4.86 The outcome of this assessment shows that Moderate Adverse effects are predicted at a small number of receptors as a result of the proposed extension areas. However, with the additional control measures set out

in the assessment implemented, it is anticipated that no greater than Slight Adverse impacts would be experienced at nearby receptors.

4.87 Consequently, this assessment and monitoring shows that the operation can be operated in a manner unlikely to cause significantly adverse air quality or dust impacts in their vicinity.

4.88 Cumulative impacts are not anticipated. With reference to best practice guidance, the overall impact of the operation is considered to be not significant.

4.89 Following the consultation process, the proposed Dust Management Plan (DMP) has been revised and updated and is submitted under the Reg' 25 Response. The intention is that the DMP is implemented as part of the planning controls for the Site. The updated DMP contains a more detailed approach to both monitoring and mitigating potential dust emissions to protect the surrounding area and local residents.

AIR QUALITY

4.90 The air quality report provides an assessment of air quality impacts associated with the proposed development of a new access road onto the A606 as part of a 'stay in business' planning permission at Ketton Cement Works. The report includes:

- Characterisation of the baseline conditions at the Site using monitored pollutant data from RCC and background concentrations from Defra background maps.
- Assessment of the impact of the proposed development on existing sensitive receptors from transport emissions; and
- Recommendations for mitigation measures where required.

4.91 An assessment of the operational air quality impact was undertaken for the proposed development.

4.92 The modelling work undertaken as part of the assessment made conservative assumptions regarding background air quality concentrations to provide a robust assessment, notably assuming no reduction in ambient concentrations from 2030 onwards. In reality, ambient concentrations are expected to improve due to the effects of emissions improvements to meet clean air legislation that are already being introduced across the country e.g. through initiatives such as transitioning from fossil fuel use to green energy.

4.93 The annual mean and one-hour mean NO^2 objectives are forecast to be met at all modelled receptors. The PM_{10} and $PM_{2.5}$ concentrations are also forecast to meet their respective long and short-term AQO at all modelled receptors.

4.94 Overall, the impact on local air quality from the proposed development is considered to be not significant.

4.95 No further mitigation measures are proposed.

4.96 The proposed development is not considered to conflict with national, regional and local air quality planning guidance because it does not result in significant negative impact on air quality.

4.97 In summary, the impact on air quality is negligible with no significant effect. The proposal does not conflict with national, regional and local planning guidance.

POPULATION, HEALTH & SOCIOECONOMICS

4.98 Several factors from development can impact, both positively and negatively, on the local population and health. This can include direct health impacts, such as air quality or noise effects, to road safety effects and the benefits of employment for the local community.

4.99 As set out in the studies above, no significant adverse effects have been identified due to noise, air quality/dust or traffic. A major positive amenity benefit will arise from the diversion of traffic away from the villages of Tinwell and Ketton. There will be a corresponding new traffic flow on the A606, onto which traffic will be diverted, but as that road is much less populated, with no footways and fewer houses. Most of the houses on that section of the A606 tend to be set well back from the highway edge, unlike those in the villages of Tinwell and Ketton.

4.100 The provision of new and improved rights of way around the Site and through the restored areas, as well as off-road paths alongside Empingham Road will promote health, recreation and wellbeing. The paths beside Empingham Road will give pedestrians a much safer route between the village and Wytchley Warren Cottages.

4.101 No cumulative adverse health effects are anticipated as all the potential adverse effects are well within recognised limits.

4.102 From a socio-economic point of view, the quarry will result in positive effects on job retention for the existing employees as well as those that derive indirect incomes from the quarry e.g., local businesses supplying the quarry. It is estimated that C4-5000 people derive at least part of their livelihood from the existence of the Works.

4.103 The provision of many safe jobs up to 2060 (as a result of the Works staying open) is also likely to have a positive impact on mental health in a community where there are few large employers.

4.104 The contribution that the Works makes to public finances e.g. through non-domestic rates, as well as the similar taxation paid by the company's employees, all go to fund RCC's services and infrastructure.

4.105 Furthermore, the cement produced is an essential component of almost every construction project and is needed across the country to deliver new local services and green infrastructure projects. Ketton Cement Works is a major part of the UK construction sector, accounting for C10-15% of all cement used in the UK. Extending the quarry offsets the need to import materials from other countries to deliver those projects. Globally, the UK cement industry is one of the cleanest, meaning that many international sources do not perform to the same high standards as Ketton and are therefore likely to be more impactful on health in their source countries. Such sources often require long-distance haulage by ship/HGV just to reach the UK. For a robust economy and delivery of development plan aims, the UK must have a reliable and available source of the construction materials it needs. This was one of the key reasons that the county council allocated areas of search in its minerals local plan.

4.106 On this basis, it is not considered that there are unacceptable health impacts arising from the proposals. There are significant amenity benefits in diverting HGV traffic away from the centre of Tinwell and Ketton villages.

CLIMATE CHANGE AND CARBON

4.107 Cement production involves the heating of calcium carbonate, with other minerals, at a high temperature. Traditionally, the global cement industry relied on fossil fuels to underpin the cement making process. In many parts of the world, such practices continue today, although some areas are now transitioning to low carbon alternatives.

4.108 The extension of Grange Top Quarry will allow cement production to continue to circa 2060 and Heidelberg Materials has therefore already embarked on a major carbon reduction plan that will result in net zero by 2050.

4.109 Concrete, and the cement used to make it, are essential materials for our economy and our way of life. New homes, schools, hospitals, workplaces, roads and railways, as well as the infrastructure that provides us with clean water, sanitation and energy, all require these materials. Alternatives do exist but they too have significant sustainability issues.

4.110 The closest alternative – steel – also starts with mineral extraction from the ground and is produced using high temperatures (hotter than those in cement manufacture) before being made into steel products that are shipped around the world. Another structural alternative – timber – is not available in anywhere near the volumes that are required for global construction and does not have the properties or durability required for infrastructure and high-rise buildings.

4.111 UK concrete and cement currently account for around 1 % of UK industrial carbon dioxide emissions, significantly lower than the global average, where cement accounts for around 7% of emissions. Early action by the UK concrete and cement industry has resulted in emissions already being 53% lower than in 1990.

4.112 Ketton Works emits 0.0015% of UK total carbon emissions to produce 10-15% of UK cement supply. It remains the case that the main sources of carbon are the domestic and transport sectors which account for over 50% of UK emissions. Using cement therefore does generate carbon, but the projects in which it is used e.g. nuclear and green energy help make much larger reductions in carbon from those sectors.

4.113 Ketton generates approximately 705 $kgCO_2e$/tonne (for CEM 1 cement.) The average for the UK/EU and its trading partners is reported to be around 870 kgCO2e/tonne[2] for the gross emissions. The UK is therefore at the forefront of reducing carbon emissions from cement, although there is still work to do.

4.114 Heidelberg Materials is already a leading force in the development of carbon capture technology in the cement industry, both in the UK and the wider world having an operational carbon capture plant in Norway and is about to start building a £400 million scheme at its Padeswood site in Cheshire. These trials and initial schemes are shaping and refining the future carbon capture schemes for sites such as Ketton. However, the challenges run deeper than merely capturing the carbon, they also extend to how to manage it once captured. Some can be used in other processes but the bulk of it requires long-term storage – usually in natural exhausted gas fields.

4.115 Ketton continues to be an industry leader in the use of alternative fuels by continuing to find different sources of fuels recovered from waste. The installation of a solar farm on restored land at the Site already provides renewable electricity to the Site.

4.116 Work is also ongoing in identifying alternative raw materials to be used in the process, some of which are waste-derived, with the primary aim being to reduce the need for limestone. Examples include the use of ground-granulated blast furnace slag from the steel industry.

[2] Dustscan - See Figure 49 in 'Greenhouse gas emission intensities of the steel, fertilisers, aluminium and cement industries in the EU and its main trading partners' https://publications.jrc.ec.europa.eu/repository/handle/JRC134682 and its interpretation in the European Commission 'Default Values for the Transitional Period of the CBAM Between 1 October 2023 and 31 December 2025'.

4.117 Throughout this development, it is expected that carbon levels will be reduced to zero by a raft of innovations comprising all of the above techniques.

4.118 Cement remains an essential construction product with no practical alternatives, given the sheer volumes required by the construction industry. Almost all housing and green energy projects require concrete to be delivered, the importance of maintaining cement supply to meet these key goals is therefore clear. The planning balance therefore favours continued production to satisfy society's needs, but against a background where carbon emissions can be steadily reduced to zero as appropriate technology, techniques and fuels become mainstream and readily and reliably available.

CUMULATIVE EFFECTS

4.119 Grange Top Quarry sits remote from other developments, located, as it is, in a predominantly rural area. There are, therefore, a few other developments with which the proposal could have a cumulative effect.

4.120 Whilst carbon emissions are significantly adverse, those effects are on the upper atmosphere rather than local to the Site, and do not readily accumulate with local effects.

4.121 The main local effects that could accumulate with other development is highway effects, where other developments may add traffic to the local highway network. To address that, the highways assessments have considered major developments, some as far as the Nene Valley. However, no unacceptable cumulative transport effects have been identified.

4.122 Other more local effects of the scheme are not considered likely to accumulate within the scheme to a level that they collectively make the proposal unacceptable. The greatest effect on Site will be the change to the landscape although even then, the change is not considered unacceptable as a result of the proposed landscaping and restoration.

4.123 All other effects are considered to be of such a level as not to result in significant effects either in their own right or cumulatively with each other.

4.124 The proposals positive cumulative effects far outweigh any negative in terms of the public interest. Presently, the quarry will be exhausted in 2032. Without an extension, several thousand jobs will be affected locally, and the UK cement supply would reduce by 10-15% making the UK reliant on imported cement for 50% of its needs. The shift to green energy and building 1.5 million new homes will exacerbate this shortage.

4.125 Ketton Works is also a significant source of income to the Council, such that if it were to close, there would be a corresponding dip in public finances. Business rates alone last year equated to over 3% of the Council's net budget.

4.126 Whilst the carbon effects of the scheme are adverse, the uses for which that cement is used will help reduce greater carbon emissions elsewhere in the economy. The assessment has concluded that there will be no unacceptable cumulative effects arising from the development.

5 Conclusion

5.1 This non-technical summary (NTS) sets out the salient points arising from the Environmental Impact Assessment that accompanies the planning application to extend Grange Top Quarry. The resulting Environmental Statement is a large document and includes a level of technical detail that many interested parties do not require. This NTS therefore provides a simplified summary of the main issues and the mitigation measures proposed. A summary of mitigation proposals can be found in section 6 below.

5.2 Following the collation of consultation responses from the original application, the Council requested further environmental information through a Regulation 25 Request. A Regulation 25 Response has been prepared and submitted to the Council. The NTS has been revised to reflect the findings of a Regulation 25 Response to the Council's request for further information.

5.3 The Council's development plan includes policies that support the extension of the quarry to maintain nationally important cement production at Ketton. Emerging policy in the replacement local plan makes a similar provision. The proposals, therefore, accord with the aims of the development plan.

5.4 Castle Cement Ltd (trading as Heidelberg Materials UK) has submitted a planning application to Rutland County Council for two extensions to the existing Grange Top Quarry to allow operations to continue to C.2060. Cement manufacturing has continued at Ketton Cement Works for 100 years and is a well-established part of the local community, providing nationally important cement to the construction industry.

5.5 The proposal will extend the life of the Works to C.2060. with two quarry extensions, one to provide mainly clay (field 14) and the other to provide limestone (NW land).

5.6 The proposal includes a new Works access road connecting the cement works to the A606 at Shacklewell via a new roundabout in C 2033. This will then take all site HGV traffic. The existing site access to the A6121 at

Ketton will remain open for staff and emergency use if the new access is unusable e.g. due to road works/closure of the A1 at Stamford etc.

5.7 The extensions will be worked after the existing permitted reserves have been exhausted in C2032.

5.8 Agricultural operations will continue on unworked areas throughout the operations, although the farmable area will be temporarily reduced in a phased way to accommodate the quarry. Following the restoration, farming will continue with arable continuing on NW Land and Field 14 becoming pasture due to the restored landform. The restoration will include a five-year aftercare period.

5.9 Biodiversity net gain is built into the development with well over 14% gain being provided. Similarly, significant upgrades to the rights of way network are proposed from the very start of the development being permitted.

5.10 Some adverse impacts do arise. Notably, traffic will increase on the A606, mainly between Shacklewell and the A1 at Stamford, with a corresponding reduction of traffic along the A6121 through Tinwell and Ketton villages. Some hedgerows and trees will be removed as part of the proposals although greater numbers of trees will be planted, and hedgerows replanted as part of the restoration.

5.11 Carbon emissions are also a likely significant effect, arising more through the chemical process of turning limestone and clay into clinker. Heidelberg Materials is reducing its carbon emissions with the aim of achieving net zero by 2050. In the meantime, the cement it produces is being used to deliver low carbon infrastructure such as nuclear and green energy as well as new housing etc.

5.12 An environmental impact assessment (EIA) has been undertaken and mitigation measures proposed. No environmental effects have been identified, either individually or cumulatively, that would result in unacceptable effects on surrounding neighbours and environment. Even the carbon emissions, though significantly adverse, are acceptable in the planning balance. This is on the basis that carbon is at site is being reduced to reach net zero by 2050, and the cement from the process is delivering larger carbon reductions elsewhere in the economy, through the green energy projects in which it is an essential component. Mitigation measures for the entire scheme are incorporated into the proposals to ensure any effects remain within acceptable limits for the duration of the development.

5.13 Whilst the planning application primarily seeks two quarry extensions, the application also includes much of the existing permitted quarry, despite there being few changes in that area. This approach has been taken as it will mean that if planning permission is granted, the new permission will control operations not only in the extensions but in the existing quarry as

well. This will ensure that the whole quarry is operating to a single set of modern conditions, providing clarity for the operator, planning authority and the local community alike, over the standards to which the Site should comply.

5.14 Outside of the planning application, Heidelberg Materials is already well engaged in reducing its carbon emissions to zero by 2050. In doing so, it has already reduced its emissions by over 50% compared to 1990 levels. This work will continue across the life of the Site and the proposed extensions.

5.15 A Regulation 25 Response has been submitted to the Council to assist in addressing the consultation responses.

5.16 The EIA has contributed to the design of the scheme and the mitigation measures proposed. Providing these mitigation measures are employed, no unacceptable effects, either singly or cumulatively, are expected to arise that should prevent planning permission from being granted.

5.17 As the quarry extensions accord with the Council's development plan and as the proposed scheme has been designed to meet the Council's environmental protection policies, the proposal is considered to accord with the principles of sustainable development. On this basis, national policy supports the view that planning permission should be granted, subject to appropriate conditions and controls being put in place.

6 Mitigation Summary table

Table 5 - Mitigation Summary Table (Extract from Appendix 10 of the Regulation 25 Response)