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Non-Technical summary

Horn Crag Quarry

A.D. Calvert Architectural Stone Supplies Ltd.

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Minerals
Waste
Environment

The Mineral Planning Group Ltd.
The Rowan Suite, Oakdene House,
Cottingley Business Park, Bingley,
West Yorkshire BD16 1PE

01274 884599/884699
headoffice@mpgyorks.co.uk

www.mpgyorks.co.uk

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Non-Technical Summary

1.0. Introduction

- 1.1. *The Mineral Planning Group Ltd. (MPG)* have been commissioned by *A. D. Calvert Architectural Stone Supplies Ltd. (Calverts)* to prepare a Planning Application and accompanying supporting statement for the re-opening of a dimension stone quarry at Horn Crag Quarry ('The Site'), near Silsden. The Site is a historic quarry, last worked in the 1980s. Quarrying has been recorded at The Site since at least 1853¹.
- 1.2. The proposals would release approximately 520,000 tonnes of high-quality masonry stone (also known as dimension stone) over a 20 year period, a traditional building product, which could be used to restore historic assets or to construct new development in keeping with the local character, so as to prevent a reliance on imports or deterioration of the region's building style.
- 1.3. The following document is a non-technical summary of all supporting documents and studies that accompany the planning application for mineral extraction at Horn Crag.

2.0. Site Description

- 2.1. The Site area is approximately 5.9ha (14.6 acres), although only 3.92ha (9.7 acres) would be worked for minerals.
- 2.2. The Site currently consists of a former quarry (including quarry faces and vegetated piles of stone²), heathland areas and gorse scrub, acid grassland (used for agriculture) and areas of self-seeded trees / scrub³. It is surrounded in all directions by agricultural grassland.
- 2.3. The elevation of The Site ranges from 232m AOD in the west of The Site, to 256m AOD in the northeast of The Site. The base of the historic quarry face is 241m AOD

¹ As shown on historic OS maps

² Unusable stone that was historically not removed from The Site

³ Trees have grown along the western element of The Site

and the top of the current face is 248m AOD. Existing levels are shown on drawings ref: *E454-001, E454-002*. Some of The Site's topography, particularly in the west, is comprised of made ground / mineral waste. Additionally, there is a vegetated bund on the west of The Site.

- 2.4. The bedrock beneath The Site, and the rock that is proposed to be extracted, is the *Middleton Grit Unit*, which was deposited in the Carboniferous period between 324 and 328 million years ago.
- 2.5. There are no surface water courses within The Site. The groundwater level (water table) was recorded as part of the exploratory borehole drilling carried out at The Site. The depth of the water table varies between 245m AOD in the east and 230m AOD in the west of The Site. Groundwater is discussed in further detail in section 8 of this Non-Technical summary. A spring-fed chamber is located on the western edge of The Site; this is also discussed in further details in section 8 of this Non-Technical Summary.
- 2.6. Footpath Silsden 18 is mapped as crossing through the centre of The Site in a north-south orientation (notably leading directly off, then back up the existing quarry faces). Footpath Silsden 19 abuts The Site to the south. The route of Silsden 19 would remain largely unaffected, though a diversion is proposed to improve public safety where it crosses the access track. An application for appropriate diversions of Footpaths Silsden 18 and Silsden 19 would be made prior to the commencement of any operations at The Site. Proposed diversions of Footpaths Silsden 18 and 19 are shown on drawing ref: 232/5 – 5, which would include improved surfacing and dry stone wall crossing points to enhance the accessibility which would be clarified in the footpath diversion application.

3.0. Operational Details

- 3.1. The proposed operation of The Site could be simplified into three stages: Preparation, Extraction and Restoration.

Stage 1: Preparation

- 3.2. A period of preparation would be needed prior to extraction starting to make The

Site functional. Initially Phase 1 (shown on drawing ref: 232/5 - 3) would need to be prepared to create an operational area / entrance, for turning and loading. Crushing and screening of historic mineral waste still on-site may be carried out to prepare the area.

Stage 2: Extraction

- 3.3. Mineral extraction would be phased, initially working from west to east in the southern half of the extraction area before working north toward the northern extraction boundary, as shown on drawing ref: 232/5 – 3.
- 3.4. The Site sits on top of sandstone, which is relatively permeable, allowing surface water to ‘soak’ into the ground. Should there be any excess surface water that does not immediately soak into the ground (for example, during extreme rainfall events), a sump would be maintained throughout extraction in the lowest point of The Site. The location of the sump would migrate as extraction progresses.
- 3.5. Stone would be transported to the operator’s processing facility to be processed into high-quality bespoke masonry products. Stone which is not of a high enough quality to be sold would be retained on Site to be used in restoration.
- 3.6. No blasting would occur at The Site. If necessary, hydraulic splitting would be used to split rock to make it more manageable in size for transportation. Stone would be moved around The Site by an excavator.
- 3.7. The base of extraction would always be at least 1m above the groundwater table. The proposed base of extraction is shown on drawings ref: E454-001 and E454-002.

Stage 3: Restoration and After-use

- 3.8. The restoration and after-use of The Site discussed in detailed in section 7 of this Non-Technical summary.
- 3.9. The site will be restored to biodiverse habitats generating a >20% net-gain in biodiversity.

Rate of working

- 3.9.1. It is anticipated that block and mineral suitable for dimension stone (including high-quality building stone and walling stone) would be exported from The Site at a rate of only 560 tonnes (approximately) per-week totalling, approximately, 29,120 tonnes per annum. The low rate of exportation of this traditional building material from The Site reflects the small-scale nature of Horn Crag Quarry.
- 3.9.2. However, due to the nature of demand for high-quality building stone, it is highly likely that there will be ‘peaks and troughs’ in demand for the products. Therefore, the proposed end-date is the 22nd February 2043 to allow the resource to be worked out in its entirety.

Hours of Working

- 3.9.3. The working hours are proposed to be as follows:

07:30 – 18:00 hours Mondays to Friday

08:00 – 13:00 hours Saturdays

- 3.9.4. No production work would be undertaken on Saturday afternoons, Sundays or Bank Holidays, when only emergency maintenance of plant and equipment would be carried out.

Site Access / Vehicle Movements

- 3.9.5. There would be no more than 5 two-way HGV movements on any single working day, as well as a maximum of 20 HGV two-way movements per week.
- 3.9.6. HGVs would adhere to the routing agreement proposed, shown on Drawing ref: *232/5 – 6*. HGVs would leave The Site to the south, turning left (southeast) onto Fishbeck Lane before turning right (south) onto Brown Bank Lane. HGVs would then turn right (north) onto Bolton Road. This routing agreement avoids roads unsuitable for HGVs and prevents HGVs from The Site travelling through the centre of Silsden.
- 3.10. It is proposed that HGVs accessing The Site would have a Euro emissions rating

of 5 or higher. Using HGVs with a Euro 5 emissions rating or better would mitigate the particulate emissions resulting from the proposed operations⁴.

Plant and Equipment

- 3.11. An excavator would be used to bring block away from the quarry faces. No blasting would occur at The Site. No stone cutting would be carried out on Site, instead the extracted block and mineral suitable for dimension stone would be transported to the operator's processing yard.
- 3.12. An excavator and front-end loader would be used to move materials around The Site.

Mineral Quantities

- 3.13. It is anticipated that approximately 520,000 tonnes of total saleable material could be extracted from The Site. Due to variations in the natural properties of rock it is estimated that approximately 210,000 tonnes of this would be high-grade masonry (dimension) stone and 310,000 tonnes would be suitable for walling or paving stone.
- 3.14. This application does not seek to export aggregate products from The Site, therefore, 'mineral waste' generated during the operations would be retained for use in restoration.

Security

- 3.15. The Site's entrance would be gated and locked outside of approved operating hours. The welfare unit and tool storage unit would both be locked outside of operating hours. 24hr CCTV would be put in place, focused on the fuel storage unit, which would also be locked when not in use.

4.0. Policy

⁴ A Euro 5 or 6 emissions rating refers to a set of standards that modern vehicle engines must meet. Euro 5 was introduced in 2011.

- 4.1. There is a presumption in favour of development proposals which are in accordance with the Development Plan.
- 4.2. The Development Plan and National Policy for this proposal is a combination of the following adopted and emerging local plans so far as they are relevant:
- The National Planning Policy Framework (NPPF) 2021
 - Bradford Metropolitan District Council (BMDC) Core Strategy Development Plan Document (DPD) 2017
 - BMDC Site Allocations DPD – 2018
 - Minerals Background Paper and Evidence Report - 2015
 - BMDC Emerging Local Plan (consultation draft February 2021)
- 4.3. An assessment of the relevant policies within the Development plan has been carried out for this application. Where policies stipulated requirements, these have been considered and addressed within the proposals. It is considered that the proposals are in accordance with the Development Plan.
- 4.4. The Site is within the Green Belt. Consideration of Green Belt policy is necessarily technical, therefore please refer to the assessment carried out in Chapter 4 of the Supporting Statement.
- 5.0. Flood Risk Assessment**
- 5.1. A Flood Risk Assessment (FRA) has been carried out to accompany this planning application as is required for developments over 1ha.
- 5.2. The Site is within Flood Zone 1 (lowest risk)⁵ and the long-term flood risk of the area is '*very low*'⁶.
- 5.3. Surface water at The Site would be managed through a migrating sump, which would have the capacity to accommodate an extreme precipitation event. A sump is the low point in a site to which surface water is directed. A migrating

⁵ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#Table-2-Flood-Risk-Vulnerability-Classification>

⁶ <https://flood-warning-information.service.gov.uk/long-term-flood-risk/>

sump moves along with the current phase of extraction and restoration so surface water can always be sufficiently attenuated within The Site.

- 5.4. The base of extraction and, thus the sump, would maintain a 1m standoff from the water table (groundwater), therefore, the proposals would not alter the groundwater regime. Consequently, the risk from groundwater flooding at The Site would not be increased by the proposals.
- 5.5. The FRA concluded that the risk of flooding at, or away from The Site is **very low**. The proposed extraction of mineral from Horn Crag would not increase the flood risk due to surface water and groundwater at or away from The Site during the operations or upon restoration of The Site.

6.0. Dust Management Plan

- 6.1. A Dust Management Plan has been produced for the proposals. The Dust Management Plan produced has been informed by the Dust Assessment carried out at The Site (see section 23 of this Non-Technical Summary). Continual visual dust monitoring would be carried out during operation. Should they be deemed necessary by the Site Manager, dust mitigation measures would be implemented.
- 6.2. To prevent excessive dust being generated from moving vehicles, a 10mph speed limit would be enforced throughout The Site.
- 6.3. Dust mitigation measures would include the wetting down of haul roads, stockpiles and working areas and the suspension of operations.
- 6.4. It is considered that Horn Crag Quarry could operate without causing an unacceptable adverse impact due to dust.

7.0. Restoration Scheme

- 7.1. A schematic restoration scheme has been produced to accompany this planning application. A detailed restoration scheme (and aftercare scheme) would be required by condition if planning permission is granted. The detailed restoration

- scheme would include the final topography and species / seed mixes.
- 7.2. The schematic restoration design is shown in drawings ref: 232/5 – 7, 232/5 – 8, 232/5 – 9, 232/5 – 10, E454-005 and E454-006.
- 7.3. No waste materials would be imported for the restoration of The Site.
- 7.4. A Preliminary Ecological Appraisal (PEA) has been carried out at The Site and is discussed further in section 12 of this Non-Technical summary. The baseline biodiversity score of The Site has been calculated using version 3.1 of Defra’s biodiversity metric as 38.96 Biodiversity Units. The Site would be restored to generate long-term, meaningful, biodiversity net-gains, and to create an appropriate landscape feature befitting of the name Horn Crag. The biodiversity net-gain calculated at the end of the aftercare period is +21.42%. The restoration of The Site would include retained faces⁷, acid grassland, heathland, mixed and gorse scrub, wetland areas / ponds and the retention of existing biodiversity features.

8.0. Hydrogeological Impact Assessment

- 8.1. A Hydrogeological Impact Assessment (HIA) was carried out for The Site. The HIA described the local geology and hydrogeology, modelled the groundwater beneath The Site, assessed the potential impacts on groundwater and recommended mitigation measures. The HIA utilised publicly available geological information in addition to the geological and groundwater level information recorded during the exploratory drilling carried out at The Site by the Applicant.
- 8.2. The HIA modelled the groundwater flowing towards the west and determined that it is, on average, approximately 11m below the current ground level⁸.
- 8.3. The HIA concluded that if extraction takes place above the water table (the base of extraction maintains standoff of a minimum of 1m from groundwater), the

⁷ Retained faces would have a maximum height of 5m.

⁸ The range in the depth of the water table depends on the small-scale variations in topography

proposals would not impact the groundwater regime including local drinking water supplies.

9.0. Noise Impact Assessment

9.1. A Noise Impact Assessment (NIA) has been carried out for the proposals. The survey identified two noise sensitive receptors: Horn Crag Farm and Green Acres on Fishbeck Lane. The NIA involved measuring the current background noise level at The Site and at the noise sensitive receptors and then modelling worst-case scenario of the predicted noise levels during the operation of The Site, taking into account the proposed plant and equipment, operating hours and the frequency of activities.

9.2. There are some temporary preparatory activities at The Site which may, briefly, cause a noise impact at the noise sensitive receptors. However, the conclusion of the NIA was that the proposals would be acceptable as these activities would be short-lived and carried out infrequently.

10.0. Landscape and Visual Appraisal

10.1. A Landscape and Visual Appraisal (LVA) has been carried out to accompany this planning application. The LVA involved an assessment of where The Site would be visible from. A further assessment was then made as to whether the impact of the proposals would be significant at each of the viewpoints.

10.2. The LVA highlighted that Horn Crag has been part of the landscape since approximately 1853. It goes on to explain that minerals operations are considered to be a not unacceptable form of development in the Green Belt. The LVA also clarifies that the proposed extraction at Horn Crag would be a small-scale operation, resulting in slow, incremental change to the landform of The Site.

10.3. The LVA concluded that whilst short distance views of The Site would be temporarily impacted by the proposals, dimension stone extraction at The Site would be successfully accommodated by the wider landscape if the western trees and the dry-stone walls on the perimeter of The Site are conserved throughout the operation of The Site. It goes on to also conclude that there would

be a “*Major Beneficial*” change to the landscape 15 years after the restoration of The Site.

10.4. Additionally, photomontages were produced for five of the viewpoints. A photomontage is a projected illustration of what The Site would look like during a particular phase of working. The photomontages are shown in drawings ref: *232/5-11, 232/5-12* and *232/5-13*.

11.0. Transport Statement

11.1. A Transport Statement (TS) was carried out for the proposed mineral extraction at Horn Crag. The TS assessed the impact the proposals could have on the local road network.

11.2. The TS highlighted that the proposals would require a low number of HGV movements; only 5 in and 5 out a day, with a maximum of 20 in and 20 out in a week. The TS also reiterated the proposed HGV routing strategy (drawing ref: *232/5-6*) which would not permit HGVs to drive through Silsden, instead sending them northward on the A6034 Bolton Road from the junction of Brown Bank Lane.

11.3. A speed assessment was undertaken on Brown Bank Lane which concluded that the proposed visibility splays would be acceptable.

11.4. The TS concluded that the proposals would not cause an unacceptable impact on the highway network.

12.0. Heritage Stone Survey

12.1. A Heritage Stone Survey (HSS) was carried out to accompany this application. The HSS involved cataloguing buildings constructed from natural stone in the 3 main towns near to The Site: Silsden, Ilkley and Keighley. The HSS showcased that there is a demonstrable need for masonry stone locally, for both the upkeep of the buildings already built and further construction in-keeping with the traditional character of the area.

13.0. Preliminary Ecological Appraisal

- 13.1. A Preliminary Ecological Appraisal (PEA) was carried out for The Site. The PEA assessed the current biodiversity of The Site, including calculating its biodiversity value using the DEFRA Biodiversity Metric. This Biodiversity Metric calculation involves recording the type of habitats there are within The Site and then assessing what the ecological value of each habitat is.
- 13.2. The PEA stated that The Site comprises a mosaic of a former quarry, areas of self-seeded trees / scrub, acid grassland (used for agriculture), heathland areas and gorse scrub. Further studies were recommended and were subsequently carried out; these studies are summarised in sections 13 to 22 of this Non-Technical summary.
- 13.3. The PEA concluded that The Site has a baseline Biodiversity Score of 58.42 units.

14.0. Breeding Bird Survey

- 14.1. Following the recommendations in the PEA carried out at The Site, a Breeding Bird Survey was carried out. The Breeding Bird Survey involved 3 site visits between late March and June in 2021 and a further 2 site visits in July and August of 2022; when birds would be nesting.
- 14.2. Breeding activity was observed at The Site, however, it was generally “*restricted to the areas along the western edge of the Site, where trees and mixed scrub have established naturally*”. Only one breeding species within The Site was not found in the vegetated area on the western edge of The Site. The proposed development, however, seeks to retain this vegetated western edge of The Site and, as such, most breeding bird habitat would not be lost within The Site.
- 14.3. It was concluded in the Breeding Bird Survey that the Site clearance should take place between September and February and that if Site clearance must take place between March and August (inclusive), then a breeding bird check would be required to ensure that no active nests of breeding birds are present before works commence. It also recommends that the vegetated western edge should be retained and enhanced, which has been included in the proposals.

Restoration recommendations to encourage greater numbers of birds to use The Site for breeding have additionally been included in the schematic restoration scheme.

15.0. SPA Bird Foraging Survey

15.1. The Special Protected Areas (SPA) Bird Foraging Survey was carried out at The Site as recommended in the PEA. The SPA Bird Foraging Survey assessed the extent to which The Site is used by SPA birds for foraging. This survey involved establishing which the target species are for The Site based on the nearby The North Pennine Moors SPA and The South Pennine Moors Phase 2 SPA. The target species for The Site are; Twite, Curlew, Ring ouzel, Golden plover and Lapwing. 9 survey visits were carried out; 3 daytime, evening and nocturnal visits each.

15.2. It was concluded in the SPA Bird Foraging Survey that *“Given the lack of active foraging seen within the ecological zone of influence of the site it is possible to conclude that recommencement of quarrying would not lead to any noticeable effect on curlews specifically or the North and South Pennine Moors qualifying interests.”*

16.0. Badger Assessment Report

16.1. A badger survey was carried out at The Site, the results of which are, however, confidential.

17.0. Bat Activity Survey

17.1. A Bat Activity Survey was carried out on recommendation in the PEA. 3 Site visits were undertaken for this Bat Activity Survey during spring, summer and autumn. A Site visit involved walking the same transect of The Site in conjunction with remote monitoring.

17.2. The Bat Activity Survey concluded that The Site is used by up to 6 species of bat. However, *“Patterns of activity suggest that proposals to re-open the quarry face will have minimal impact on local bat populations, provided the habitats across*

*the Site's western sector are largely avoided*⁹. On recommendation from this Bat Activity Survey lighting has been given consideration in the proposals so that there would be minimal impact to bat activity as a result of the operations, in particular protecting the retained vegetation in the western element of The Site.

18.0. Bat Emergence and Hibernation Survey Reports

- 18.1. A Bat Emergence Survey was carried out in May 2021 at The Site as recommended in the PEA. The survey was focussed specifically on the roosting potential of the historic quarry face and involved surveyors using bat detectors positioned around the rock face to record whether bats emerged from the rock face or flew back to the quarry face.
- 18.2. A further hibernation survey was carried out in December 2022 through to January 2023.
- 18.3. It was concluded unlikely that bats were using the quarry for roosting or hibernation at the Site.

19.0. Reptile Survey

- 19.1. On recommendation in the PEA a Reptile Survey has been carried out at The Site. The Reptile Survey involved identifying and placing target habitat features in appropriate places around The Site and then walking the same transect to monitor these locations and on each subsequent Site visit. Artificial refuges¹⁰ were placed around The Site in place that would most likely support reptiles; 60 artificial refuges were emplaced at The Site. The survey took place between April and September of 2021, during the optimal survey season for reptiles.
- 19.2. The Reptile survey observed no reptile activity at The Site and concluded that there is a very small likelihood of reptiles utilising The Site.

20.0. Arboricultural Survey

⁹ As is included in the proposals

¹⁰ Sheets of black corrugated plastic

- 20.1. An Arboricultural Survey was carried out at The Site to catalogue the trees within The Site boundary and identify any that should be protected throughout the proposals.
- 20.2. The trees are observed in the western element present of The Site and the species include Goat Willow, Ash, Rowan, Field Elm, Sycamore and Birch.
- 20.3. The Arboricultural Survey concluded that there are no trees within The Site that have a high arboricultural value and warrant protection. It is proposed to retain the vegetation in the west of The Site, however, this is due to the habitat it provides for wildlife rather than the value of the trees themselves.

21.0. Detailed Vegetation Survey

- 21.1. A Detailed Vegetation Survey has been carried out at The Site to ensure that all potential species of note were recorded during the growing season. The survey took place in June 2022. The Detailed Vegetation Survey concluded that *“no scarce or locally important species have been found and the habitats do not qualify for Local Wildlife Site selection”*

22.0. Biodiversity Net Gain Calculation

- 22.1. A Biodiversity Net Gain calculation has been undertaken for the proposed development, which concluded that upon restoration, a +21.42% gain will be produced. This Biodiversity Net Gain calculation follows emerging minerals specific Defra guidance, taking into account the phased nature of extraction and concurrent restoration of the proposals as well as the long aftercare period proposed.

23.0. Dust Assessment

- 23.1. A Dust Assessment was carried out at The Site to assess the potential impacts on air quality arising from the proposed development. The Dust Assessment concluded that the proposed development would not result in an unacceptable impact and recommended mitigations which have been included in the proposed operations.

24.0. Ecological Impact Assessment

24.1. An Ecological Impact Assessment (EclA) was produced after all ecological surveys had been carried out. The EclA recommended mitigation measures to be put in place before, during and after mineral extraction. The EclA concluded *“ Given the implementation of the mitigations [recommended] [...] it is anticipated that the proposals will comply with the relevant policy and legislation relating to wildlife and ecology [and] will be able to address most significant effects resulting from the development”*. The EclA reiterated the net-gain in biodiversity expected from the proposals and stated that further compensation would not be required in this regard.

25.0. Conclusion

25.1. This planning application is for a sandstone quarry at Horn Crag Quarry to the north of Silsden. The extracted block and mineral suitable for dimension stone would be transported to the operator’s processing yard to be cut into dimension stone. The resulting dimension stone would be used in the maintenance of heritage assets and in the construction of new development to maintain and enhance the traditional character of the local area. The proposed quarry would provide approximately 520,000 tonnes of high-quality masonry stone.

25.2. The Site currently consists of the historic Horn Crag Quarry, heathland areas and gorse scrub, acid grassland (used for agriculture) and areas of self-seeded trees / scrub. The Site has been historically worked for stone since at least 1853.

25.3. Dimension stone extraction is a low intensity activity, with peaks and troughs in demands for products. Therefore, the HGV movements proposed for the development would be low; no more than 5 in and 5 out in a day, as well as a maximum of 20 in and 20 out in per week. It is proposed to extract the stone in phases.

25.4. It is proposed to restore The Site in phases to minimise the visual impact of The Site. The restoration of The Site would seek to provide a long term net-gain in biodiversity above The Site’s current levels.

- 25.5. A series of assessments have been carried out to accompany this planning application to assess the proposal's potential impact on flood risk, dust and air quality, hydrogeology, noise, landscape, transport and ecology. Each assessment concluded that the proposals would not have an unacceptable impact. Additionally, any recommendations or mitigation suggested in the assessments carried out have been included in the operational design for The Site.