

MASON BROS QUARRY PRODUCTS LTD

Proposed extension to **Rhyndaston Quarry**



Environmental Impact Assessment
Volume 3

Non Technical Summary

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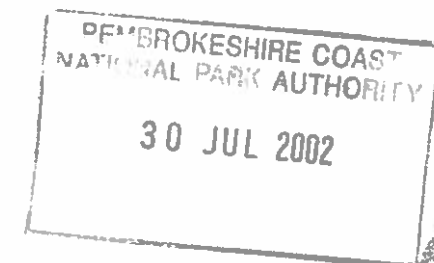
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1.0 INTRODUCTION

1.1 Background

This document summarises a proposal by Mason Bros Quarry Products Limited for the quarrying of rock as an extension to the existing Rhyndaston Quarry. The location of the site is illustrated on figure 1.



Figure 1. Site Location.

The existing quarry is regulated by an updated planning permission granted in 1997. There are reserves of approximately 1.5 million tonnes remaining to be worked as part of that permission, over a time period to December 2015. The majority

of those reserves lie on the floor of the quarry, where the permitted scheme allows for extraction to a level of approximately 20 metres below the current floor level. That scheme, if pursued, would reintroduce quarrying to the exposed area at the frontage of the site. The operation would also require the mineral void to be pumped dry during the works, and upon completion of the development, the void would then infill with groundwater to create a deep lake.

The Applicants have undertaken a review of this approved scheme, and have concluded there would be environmental and amenity benefits associated with a small scale extension of the quarry, on to immediately adjoining land to the east, rather than to deepen the quarry to the full extent currently permitted.

A revised scheme has therefore been prepared which would produce approximately the same overall reserve, and which would be worked over the same time period. However, it would allow extraction to proceed in a way which is far more effective in terms of screening; it would be associated with less amenity impact; and would provide a more attractive long term restoration scheme.

If permission is granted for the extension, then the Applicants have volunteered to relinquish their rights to deepen the existing quarry within the main central/southern area. This matter can be controlled and enforced by a legal agreement.

1.2 Summary of the Proposed Development

The scheme would involve the extraction of some 1.65 million tonnes of rock, at the current average rate of 80,000 to 100,000 tonnes per annum. The development would progress in 7 main

operational phases. Phases 1 – 5 would be worked as narrow 30 metre wide strips within the extension area, working progressively back from the existing eastern quarry face. These works would be concealed behind a ridgeline within the existing quarry, which would be retained as a screen until the end of the operation.

The development would also allow the existing crushing and screening plant to be moved into the main bowl of the quarry, which would ensure that all main quarrying and processing activities would be enclosed and very effectively screened.

Restoration of the quarry faces would continue behind the main operational area. The early restoration works would include the next phase of agricultural restoration along the south western edge of the quarry, which would continue the successful agricultural restoration which has been implemented around the south eastern fringe.

Following the completion of 'phase 5' within the extension area, the floor of the enlarged quarry would lie at a level of 90 metres AOD. Phase 6 would involve the limited deepening of the floor, by 5 metres, within part of the existing quarry, and part of the extension area. This would create a shallow lake, which would be profiled and landscaped as part of the restoration programme. These deepening operations would remain concealed within the main quarry bowl.

The final main quarrying operation, as Phase 7, would remove the main east-west ridgeline. This would open up the landform, and allow the restoration works to be completed as phase 8.

The site would be provided with a diverse range of after uses, comprising pasture, restored quarry faces and rock exposures, scrub woodland, and a landscaped amenity/nature conservation lake, with considerable bio-diversity potential.

1.3 The Non Technical Summary

A detailed Environmental Impact Assessment (EIA) has been undertaken to examine the potential environmental effects of the proposal, and to describe measures which are available to minimise those effects. The results of that EIA are set out in an Environmental Statement (ES) which accompanies the planning application. The ES has been prepared by a specialist team of consultants with considerable expertise in assessing the environmental impacts of mineral extraction.

This summary endeavours to provide a brief non-technical account of the contents of the full ES. Interested parties requiring further information about matters referred to in the summary should therefore consult the ES. Copies of the ES can be inspected at the offices of Pembrokeshire Coast National Park, Winch Lane, Haverfordwest, Pembrokeshire, during normal office hours. A full set of documents, to include the ES, the Appendices, Plans and Non-technical Summary is available for purchase at a cost of £50.00.

This summary follows the general format of the full ES in that it describes the site; the proposed development; the potential environmental effects associated with the development; the measures proposed to reduce any harmful impacts; and the planning policy context in which the submission will be considered.

2.0 The Application Site

The application site is 2.9 hectares in extent, and lies on the north eastern side of Rhyndaston Quarry. The quarry itself lies some 10 kilometres north west of Haverfordwest, and 2 kilometres north east of the village of Roch.

The site lies in open countryside, on the edge of the Pembrokeshire Coast National Park, within an area of rolling hillside, interspersed with wooded valleys. In landscape terms the quarry is not a prominent feature, and there are very few public vantage points towards the quarry.

The site itself comprises a field currently used for pasture, which lies to the south of the farm buildings within the Rhyndaston Fawr Farm complex. It is bounded to the north by a track which runs westwards from Rhyndaston Farm; to the east by a drainage ditch; to the south by the limit of the current planning permission boundary of the quarry; and to the west by the existing quarry face and fence line along the quarry boundary.

There are only isolated dwellings and farmsteads in the vicinity of the site. The closest is Little Rhyndaston Nursery, which lies some 220 metres to the south. The dwelling within the farmstead at Rhyndaston Fawr Farm is 230 metres to the north of the extension site, with Barch Farm/ Coed y Barch some 650 metres to the south west.

The site contains no formal nature conservation designations, and has no particular ecological value. Similarly, there are no scheduled ancient monuments on the site or in its immediate vicinity, and no other designated features of archaeological interest. There are no public rights of way within the site.

3.0 The Proposed Development

The development would proceed as a logical continuation of operations at the existing quarry, with no changes to the general quarry methods or scale of the operation.

The main focus of the development is to contain the extension area behind the east west ridgeline in the centre of the quarry. This would provide a very effective visual screen, and conceal the main quarry operations within the 'bowl' of the quarry. The crushing and screening plant would be relocated into the quarry bowl to benefit from that screening.

These advantages would be reinforced by retaining the main overburden mound on the floor of the quarry, which creates a narrow corridor into the quarry bowl, and thereby assists in concealing the quarry operations. The overburden mound would however be reprofiled to increase its screening value in relation to the properties at Barch Farm/ Coed y Barch to the west.

The scheme has been designed to progress as four discreet operational developments. These would comprise:

1. Phases 1-5, within the extension area.
2. Phases 6a-6c, on the floor of the existing quarry and part of the extension area.
3. Phase 7, within the central ridgeline.
4. Phase 8, and the completion of the restoration works.

The first five phases would progress the existing face in an easterly direction as narrow strips working progressively eastwards through the proposed extension area. The soils would be carefully removed and stored for reuse in restoring part of the base of the quarry to agricultural use.

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The narrow phases would limit the extent of the operational area at any one time, and the pastureland in advance of the working phase would temporarily continue in agricultural use. This programme, together with progressive restoration of the quarry faces along the northern edge of the site, would minimise the visual effects of the development from distant views from the south.

The crushing and screening plant which currently lies outside the quarry bowl would be relocated into that main quarry area during phase 3, when sufficient room has been created on the quarry floor. This would then allow all quarrying and processing activities to be confined within the quarry bowl.

The anticipated circumstances at the quarry upon completion of phase 5 are illustrated on figure 2. This shows the way in which the extension area has progressed behind the central ridgeline; the relocated processing plant within the main quarry area; the ongoing restoration works to the quarry faces; and the agricultural restoration of the south western area of the quarry floor.

Phase 6 would involve the limited deepening of the base of the quarry from 90 metres AOD to 85 metres AOD within the northern area of the site. During these works, the quarry void at the base would need to be temporarily dewatered, using the existing drainage ditch and settlement lagoon from the quarry to the Brandy Brook.

The extent of quarrying at the base has been designed to balance the recovery of stone with the desire to create an attractive and diverse restoration scheme, incorporating a shallow water feature. Importantly, the scheme does not propose deepening to

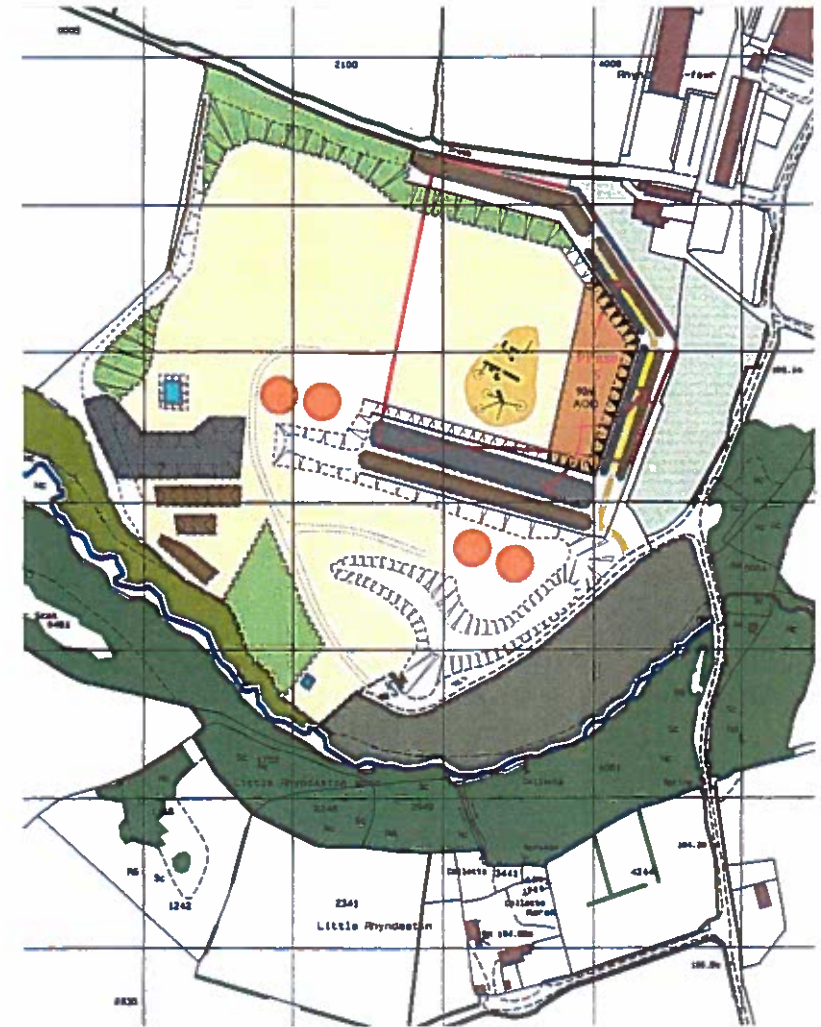


Figure 2. Phase 5 development.

the full extent which is permitted by the current planning permission (from 90 metres AOD to 70 metres AOD).

The margins of the deepened floor, and future lake, would be progressively profiled and shaped using a proportion of the soils from the temporary storage mounds, together with any reject rock encountered during the quarry operation. The anticipated circumstances at the quarry upon completion of phase 6 are illustrated on phase 3.

Phase 7 would remove the central ridgeline and open up the main quarry area to allow the final restoration landform to be created. This phase forms part of the currently permitted working area, but the revised phasing scheme, proposed as part of the extension development, would provide for the retention of the central ridgeline until the latter stages of the development. This would act as a substantial screen to the quarrying operations elsewhere within the site.

Phase 8 would primarily represent a restoration operation, which would include the removal of the narrow ridge of rock along the southern edge of the original plant site. This in turn would facilitate the comprehensive restoration of the area. In particular, it would allow use of material from the overburden mound alongside the existing site access road to be used for the restoration of the quarry margins, and the adjoining base of the quarry.

There are no proposals to alter the rate of output from the quarry, or the existing hours of operation. Vehicles would continue to use the existing site entrance. However, as part of the development, it is proposed to fully surface the quarry access road from the site entrance to the quarry weighbridge. This would provide further amenity benefits, particularly to the residents of Little Rhyndaston Nursery.

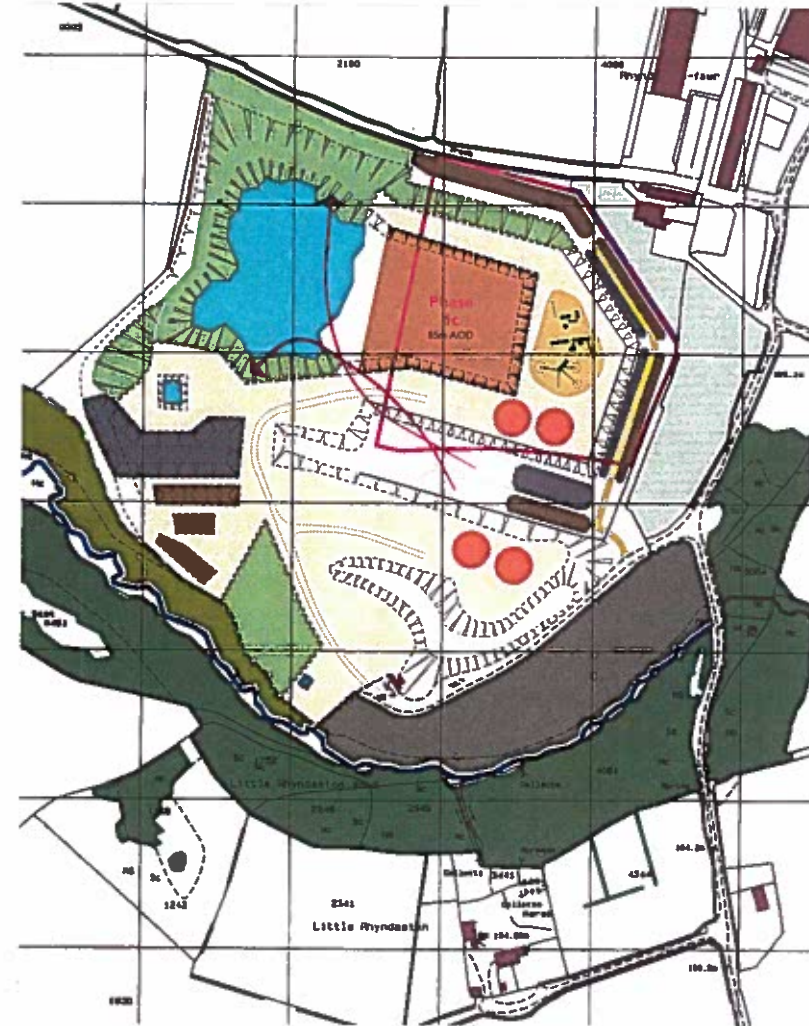


Figure 3. Phase 6 development.

4.0 Restoration

The restoration proposals would apply to the entire quarry, and would be progressively implemented during the course of the development. The scheme proposes restoration to a landform which would blend into its surroundings, with land uses which are appropriate to the locality. The objective is to create an attractive landscape feature, and a diverse range of habitats with considerable nature conservation potential.

The proposed extension area is an essential part of the beneficial restoration scheme, in that it helps to create a more natural landform, compared to the rather engineered and rectangular shape which would arise from the currently permitted quarry area.

The restoration scheme provides for the establishment of a broad south western facing landform, which would fit into the landscape trend provided by the south western flowing Brandy Brook on the southern side of the site. The northern, western and eastern quarry sides would be provided with a variety of restoration treatments of soils and rock graded against the quarry face, scree slopes, scrub woodland, and rock outcrops.

The floor of the quarry in the northern area would contain a shallow lake, with gentle gradients and an indented shoreline which would encourage aquatic and semi aquatic vegetation.

The remainder of the site would be restored to agriculture as pastureland, with a new field unit, enclosed by hedgerow field boundaries, within the central/south eastern area. This would be adjacent to the area along the southeastern boundary of the site, which has already been restored to agricultural use, and would thereby form a discreet agricultural land use area.

Elsewhere, woodland planting would be carried out, particularly around the eastern margins of the site, which would link the site with the wooded valley along the Brandy Brook, and help integrate the restored area into its landscape setting. The proposed restoration strategy is illustrated on figure 4.



Figure 4. Restoration Strategy.

5.0 Environmental Effects and Mitigation Measures

The potential environmental effects of the development have been considered in a formal environmental impact assessment, which has been undertaken by a team of specialist consultants. Full details are set out in the environmental statement (Volume 1) and its accompanying appendices (Volume 2).

The EIA has confirmed that there would be a number of potential environmental effects, which would require the implementation of measures to eliminate or reduce the extent of those impacts.

Those measures have been incorporated into the design of the scheme, where particular attention has been paid to:

- (i) the limits of the extension area;
- (ii) the phased working and restoration scheme (and, in particular, the retention of the central ridgeline screen until the latter stages of the development);
- (iii) the limited extent of the operational area at any one time;
- (iv) the direction of quarrying;
- (v) the relocation of the quarry plant into the central quarry bowl; and
- (vi) the ability to reduce the general impact of the development by specific proposals which can be enforced by planning conditions.

The environmental impact assessment has identified landscape/visual effects, noise, vibration, dust and hydrogeology as the main topics requiring detailed consideration.

These matters are addressed in the remainder of this section, where a series of schedules have been prepared to:

- (i) summarise the principal findings associated with the respective issues;
- (ii) consider the potential environmental effects which might arise;
- (iii) identify the “mitigation measures” which are available i.e. measures which are capable of reducing those effects; and
- (iv) reach conclusions as to the likely effectiveness of those measures.

The main environmental impact assessment also deals with the topics of traffic, ecology, archaeology and agricultural land quality. However, these are considered to be of limited significance in relation to the proposed development, and are therefore not dealt with in this Non Technical Summary.

Issue	Key Findings	Potential Effects	Mitigation Measures	Likely Effectiveness
Landscape and Visual Impact	<p>The Site lies within Pembrokeshire Coast National Park.</p> <p>Site not prominent in the landscape: views limited by gently undulating topography.</p> <p>Main views are from Dudwell Mountain and Rhyndaston Mountain, from the southeast and south.</p> <p>Lower level views are from short stretches of the minor road between Hayscastle Cross and Roch.</p> <p>Views from the isolated residential properties in the vicinity are generally screened by vegetation or agricultural buildings.</p>	<p>Landscape effects during quarrying potentially intrusive within the National Park.</p> <p>Gradual visual changes as extension operations progress, with potential views of new quarry faces, soil storage areas and increased working area.</p> <p>Restoration effects positive in integrating the site into its surroundings.</p>	<p>Easterly direction of working would minimise visual effects, together with phased operation in narrow 30 metre wide strips.</p> <p>Soil storage mounds to be established on central ridgeline to assist screening.</p> <p>Progressive restoration of the narrow additions to the northern quarry face.</p> <p>Processing plant to be relocated to main quarry bowl.</p> <p>Existing overburden mound on quarry floor to be retained and reprofiled to enhance screening value.</p> <p>Progressive implementation of restoration scheme, including restoration of quarry faces and agricultural restoration of south western margin.</p>	<p>Operation would be visible from isolated vantage points, but impact would be minimised and short term.</p> <p>Restoration scheme would result in positive benefits, and both landscape and bio-diversity improvements.</p>

Issue	Key Findings	Potential Effects	Mitigation Measures	Likely Effectiveness
Noise	<p>The site lies in open countryside with isolated residential properties at Rhyndaston Farm, Little Rhyndaston Nursery, Little Rhyndaston Bungalow, Barch Farm, and Coed-y-Barch.</p> <p>Background noise levels vary quite markedly from 29.9 dBA L₉₀ at Coed-y-Barch to 42.4 dBA L₉₀ at Little Rhyndaston Nursery, and 50.5 dBA L₉₀ at Rhyndaston Farm.</p> <p>Average daytime noise levels vary from 37.1 dBA L_{Aeq} at Coed-y-Barch, to 48.8 dBA L_{Aeq} at Little Rhyndaston Nursery, and 57.4 dBA at Rhyndaston Farm.</p> <p>The current planning permission places a limit of 48 dBA L_{Aeq} on quarrying activities, measured at noise sensitive properties.</p> <p>Current government guidance places an upper limit of 55 dBA L_{Aeq} on noise from mineral working sites (MPGI 1).</p>	<p>Without mitigation, there is a potential for noise disturbance at properties in the general vicinity of the site.</p> <p>All calculations are however based upon worst case scenarios, when operations are taking place at the closest distance to sensitive properties.</p> <p>These worst circumstances would only last for a short period in the overall life of the development.</p>	<p>Phases 1 – 6 screened by central ridgeline.</p> <p>Processing plant relocated to main quarry bowl.</p> <p>Western overburden mound reprofiled to provide screening to Barch Farm and Coed-y-Barch.</p>	<p>The worst case noise levels would;</p> <ul style="list-style-type: none"> (i) not exceed the 55 dBA L_{Aeq} limit for mineral extraction set out in government guidance; (ii) would not exceed the noise limit for temporary operations; and (iii) would not exceed by a perceptible level the limit imposed by the current planning permission.

Issue	Key Findings	Potential Effects	Mitigation Measures	Likely Effectiveness
Vibration	<p>Ground vibration from blasting results in stress waves in the rock which are referred to as "peak particle velocity" where movement is measured in terms of millimetres per second.</p> <p>Vibration levels of in excess of 50 millimetres per second are necessary to cause cosmetic damage to residential property.</p> <p>British Standards on vibration movements set an average limit of 8.5 millimetres per second measured at residential property, with an upper limit of 12.7 millimetres per second.</p> <p>Government guidance recommends a range of between 6 and 10 millimetres per second, with an upper limit of 12 millimetres per second.</p> <p>The current planning conditions at Rhyndaston Quarry set an average of 8.5 millimetres per second, and an upper limit of 12 millimetres per second.</p>	Unregulated and uncontrolled blasting could give rise to adverse effects from vibration.	<p>Detailed scheme of blast monitoring agreed with National Park Authority.</p> <p>Records are maintained of all blasts.</p> <p>Any excess above agreed limits is to be investigated and addressed.</p>	Blast monitoring measures are implemented by the Applicants, and blast vibration is well within the prescribed limits.

Issue	Key Findings	Potential Effects	Mitigation Measures	Likely Effectiveness
Dust	<p>Dust emissions can arise from operational activities, and erosion of exposed surfaces.</p> <p>Site generally remote, but three isolated properties within 300 metres of the site.</p> <p>Mineral processing activities controlled by existing planning conditions, and separate legislation via the Environmental Protection Act.</p>	<p>Main dust generating activities would be:</p> <ol style="list-style-type: none"> 1. Soil stripping, handling, replacement and restoration works; 2. Mineral extraction and processing; 3. Haulage. 	<p>Soils only moved in appropriate weather conditions.</p> <p>Suspension of soil handling in extreme conditions.</p> <p>Mineral extraction confined to small areas at any one time.</p> <p>Soil storage bunds to be profiled and seeded.</p> <p>All processing and loading operations to take place at quarry floor level, and within quarry bowl from phase 3.</p> <p>Use of water bowsers on haul roads.</p> <p>Speed limits on internal roads.</p> <p>Surfacing of remaining length of quarry access road from site entrance to weighbridge.</p> <p>All HGV's sheeted before leaving quarry.</p>	<p>Conventional dust controls represent standard industry practice.</p> <p>Dust controls are effective, subject to compliance with good management practices.</p>

Issue	Key Findings	Potential Effects	Mitigation Measures	Likely Effectiveness
Groundwater	<p>Excavation of rock to a depth of 90 metres AOD has taken place above the natural water table.</p> <p>No significant water problems have arisen.</p> <p>Survey of all water features within a 1 kilometre radius of the quarry has identified all springs, streams, wells and boreholes.</p> <p>Monitoring of water levels in boreholes at Rhyndaston Farm and Little Rhyndaston Nursery, and flows in catch pit at Rhyndaston Villa Farm is ongoing.</p>	<p>Currently permitted quarrying to 70 metres AOD could potentially give rise to an adverse effect on groundwater interests without mitigation measures.</p> <p>Local lowering of groundwater level by up to 5 metres, via quarrying to 85 metres AOD, is unlikely to have a significant impact.</p> <p>Limited reduction in water levels in the well at Rhyndaston Farm may occur, but substantial depth of water would remain in the well.</p>	<p>Existing ground and surface water monitoring programmes should continue.</p> <p>The collection of monitoring data would benefit from an extended monitoring programme prior to substantive deepening of the quarry.</p> <p>Phases 1-5 would be confined to levels above the water table to allow extended groundwater monitoring.</p> <p>Limited sub water table extraction confined to Phase 6.</p>	<p>Monitoring to date has not identified any adverse effects on groundwater levels resulting from quarrying.</p> <p>No adverse effects anticipated from proposed development.</p> <p>Restoration scheme would provide attractive new water feature.</p>

6.0 Planning Policy

National Planning Policy confirms that mineral developments should not take place in National Parks save in exceptional circumstances, and that planning applications for such developments should be the subject of a “rigorous examination” before being allowed to proceed.

This normally includes an assessment of:

- (i) the need for the development;
- (ii) the impact on the local economy;
- (iii) the availability of alternative supplies;
- (iv) whether effects on the environment and the landscape can be minimised; and,
- (v) in the case of extensions to existing sites, whether the development would achieve an enhancement to the local landscape and provide for nature conservation and biodiversity.

There is therefore no embargo on mineral extraction in the National Park, and the Applicants believe that the proposed development fully satisfies the above elements of the “rigorous examination”.

The Dyfed Structure Plan similarly seeks to generally restrict new mineral developments and “substantial extensions” in the National Park. In that respect, the proposed development cannot be regarded as a “substantial extension”. Moreover, the extension would not materially increase the overall volume of available reserves, by virtue of the offer to relinquish the rights to exploit a proportion of the currently permitted reserve. In addition, it would not extend the timescale of operations beyond the currently permitted deadline.

The Dyfed Structure Plan also sets out a series of criteria relating to the environmental effects which any mineral proposal must satisfy. The Applicants consider that the effects of the development at Rhyndaston can be satisfactorily controlled and minimised. Moreover, it is considered that the amenity, landscape and ecological benefits of the restoration scheme represent important positive advantages which fully satisfy the requirements of both national and local planning policy.

The National Park Authority are currently in the process of preparing a joint Unitary Development Plan with Pembrokeshire County Council. The Deposit Draft version of the UDP does not make specific allocations of sites for future mineral extraction. Applications for mineral developments will therefore continue to be considered on their merits, against a broadly similar range of environmental factors as set out in the Dyfed Structure Plan.

However, the text of the draft plan notes that there may be circumstances where a proposal might be submitted to:

“replace a permitted reserve which is difficult to work, for a variety of reasons, in which case the life of the site will not be unduly prolonged. If accepted the local Planning Authorities will seek to restrict the working of an historical reserve through a legal agreement”.

This is broadly the situation at the application site, albeit that the rationale of the development is based upon the desire to exploit reserves in a more environmentally acceptable way, rather than in any inherent difficulties in working the remaining permitted reserve. However, the principle of not prolonging the life of the site and restricting the working of part of the existing reserve by a legal agreement, are entirely applicable to the proposed development.

7.0 Conclusions: The Overall Balance of Effects

The proposed development involves the quarrying of stone as a small scale extension to the existing Rhyndaston Quarry. The additional reserves within the extension area would effectively replace reserves which are currently permitted for quarrying via deepening the floor of the existing quarry. As a result, the development would not result in any significant increase in reserves, nor would it extend the quarry timescale beyond that which is currently permitted (December 2015).

The environmental statement has considered the potential environmental effects which might arise as a result of the development. The list of environmental issues may appear to be wide-ranging, but they are not new or unusual at operational quarries. All such issues were applicable to varying degrees at the time the National Park Authority granted planning permission for the last quarry extension in 1993, and during the exercise of updating the planning conditions in 1997. Moreover, they are likely to be relevant to a potentially greater degree in terms of impact via the currently permitted scheme, in view of the location of the quarrying operations, and the depth of excavation.

The Applicants have recognised the importance of these issues and have appointed specialist consultants to review the impact, and to recommend measures which are available to reduce environmental effects where appropriate. The results of that assessment confirm that there is no single topic or combination of issues which should objectively prevent the scheme from proceeding.

Nevertheless, it is apparent that there are a number of potential cumulative environmental effects which are dependant upon the implementation of measures to reduce their overall impact, most notably the effects on the landscape, noise, vibration, dust and

groundwater. The application has been specifically designed to ensure that the development could proceed in a way which minimises impact, and the Applicants are fully committed to implementing the additional environmental controls which have been recommended.

The balance is therefore between on the one hand the principle of releasing additional land for mineral extraction in the National Park, with its consequent short term but limited environmental effects, and, on the other, the significant environmental benefits associated with the updated quarrying scheme, the concentration of quarrying within "quarry bowl", rather than on the site frontage, the avoidance of quarry deepening to 70 metres AOD, and the enhanced restoration scheme which would result.

This is a judgement which the National Park Authority will need to make in determining the Planning Application. However, the Applicants consider that in the context of the advice which they have received on environmental effects, and the measures available to mitigate those effects, that the balance weighs heavily in favour of the positive advantages of the development.