INTRODUCTION

1 This Chapter considers the likely effects on cultural heritage interests of the proposed quarry at Duneaton, Abington, South Lanarkshire. The assessment has been undertaken by Rathmell Archaeology Limited using a range of desk-based sources, consultations, and field survey.

2 Two cultural heritage sites of negligible significance have been identified by the assessment at the proposed location for the quarry. An adverse effect has been predicted to occur on these sites within the proposed extraction area. Given the past land-use history the risk of buried and unrecorded remains of archaeological significance being present has been assessed to be low.

3 Eight sites of cultural heritage significance predicted to be inter-visible with the proposed development have been identified within the wider landscape. These sites are mainly Scheduled Ancient Monuments between 1 and 3 km from the proposed development. None of these key receptors in the wider landscape have been identified as likely to receive a significant indirect adverse visual effect from the proposed development.

SCOPE OF ASSESSMENT

4 This Assessment considers the predicted impacts and effects on our cultural heritage from the Quarry at Duneaton, Abington, South Lanarkshire (NGR: NS 919 253 centred). The assessment focuses on the extraction process central to the proposed development. The assessment was informed by comments and information provided by Historic Scotland and West of Scotland Archaeology Service.

5 Cultural heritage resources include:

- Scheduled Ancient Monuments;
- Other archaeological features;
- Designed gardens and Landscapes;
- Listed Buildings; and
- Conservation Areas;

6 The proposed quarry site is situated within the arc formed by Duneaton Water and the M74 Motorway, approximately 1.2 kilometres to the west of the Abington Services. The site covers an area of approximately 13.6 ha of open hillside rising to a height of 281m OD and is bounded on its southern side by Dod Wood and the B7078, on the eastern side it is bounded by a stone dyke. The western edge stops approximately 115m from the Duneaton Water.

7 The specific objective of this current cultural heritage assessment was to:

- identify the cultural heritage baseline within the development area;
- identify the intervisible nationally significant cultural heritage sites;
- consider the potential and predicted effects of the proposed quarry extension on the cultural heritage resource; and
- propose measures, where appropriate, to mitigate any predicted adverse effects.

8 This assessment was designed to establish a baseline for considering the consequences and responses to the archaeology impinged on by the development. Whilst this baseline will be of value, there may be areas which will need further works to clarify their significance.

SCOPING AND CONSULTATION RESPONSES

9 A scoping opinion pertaining to Cultural Heritage was sought by Dalgleish Associates Ltd from Historic Scotland and the West of Scotland Archaeology Service. The consultation responses, where these bore directly on the Cultural Heritage and were materially different, are summarised below.

Historic Scotland

10 The response from Historic Scotland was that several Scheduled Ancient Monuments may have their setting impacted upon by the proposed quarry, and identified that the assessment of this impact

should be included. They also requested wire-frame and photomontage views from key cultural heritage sites.

West of Scotland Archaeology Service

11 The response from West of Scotland Archaeology Service was that they confirmed that there were no known archaeological sites within the development area, although there are sites in the surrounding area some of which are scheduled ancient monuments. They also requested that an assessment of predicted direct impacts of the quarry on buried sub-surface archaeological deposits, as well as indirect impacts on the settings of the significant archaeological sites.

METHODS

12 This assessment was conducted in accordance with the Institute of Field Archaeologists Code of Conduct and Appropriate Standards. In addition, the assessment was conducted according to established Rathmell Archaeology Ltd methods.

Baseline Survey within the development area

13 The whole of the development area, as shown on Figure 1, was the subject of a desk-based study and field survey. All sites identified by the desk-based study and the reconnaissance survey were recorded and assessed for potential direct or indirect impacts.

14 Up-to-date information was obtained on the locations of cultural heritage sites with statutory protection and non-statutory designations within the proposed development area.

15 Ordnance Survey maps and earlier historic maps held by the Map Library of the National Library of Scotland and the Mitchell Library were examined to provide information on sites of potential archaeological significance and to assess land-use history for the area. Bibliographic references providing historical background were consulted from the National Library of Scotland, Mitchell Library, the National Monuments Record of Scotland library and our company reference collection. The aerial photograph collections of the Royal Commission on the Ancient and Historic Monuments of Scotland were also consulted.

16 A survey was undertaken during December 2006 when a field team visited known or presumed cultural heritage sites in or within close proximity to the development area.

Survey of Receptors outwith the development area

17 Data was collected on Scheduled Ancient Monuments, Non Statutory Register sites, Conservation Areas and Categories A and B Listed Buildings within a study area defined as 3 km from the center of the proposed quarry. These were then assessed against the quarry model by Dalgleish Associates Ltd and those falling within the theoretical zones of intervisiblity were assessed for potential indirect visual impacts.

18 It is considered that, at distances greater than 3 km, the indirect, visual effect on a nationally or regionally important cultural heritage site's setting is generally not significant. This determination is based on the character of the quarry, the anticipated consequences of the extraction and the presence in the landscape of large modern man-made structures such as the M74 and the West Coast Mainline railway.

POLICY CONTEXT

Statutory protection

19 Under the *Ancient Monuments and Archaeological Areas Act 1979*, the Scottish Ministers are required to compile and maintain a Schedule of monuments assessed to be of national importance. The statutory consent of the Scottish Ministers is required before any works are carried out which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Ancient Monument.

20 Sites with the confident potential to contain the burial of human skeletal material are also protected by the crime of violation of sepulchre (the common law crime of unlawful interference with human remains).

Planning guidance

21 Cultural heritage sites and monuments without statutory protection are curated by the local planning authority. NPPG 5 and PAN 42 provide national planning policy guidance and advice on the treatment of this resource. PAN 42 indicates that the principle that should underlie all planning decision making is preservation of cultural resources, *in-situ* where possible, and by record if destruction cannot be avoided. It is recognised in the document that preservation may not always be possible and, where damage is unavoidable, various mitigation measures will be appropriate.

22 Adverse effects deriving from proposed development works on the amenity and setting of a Scheduled Ancient Monument form an important consideration in the granting or refusal of planning consent to conduct development works.

23 All the potential cultural heritage remains identified or postulated within the development area should be dealt with in keeping with the issued planning guidance and hence through close negotiation with the planning authority and their advisors, the West of Scotland Archaeology Service.

Listed Buildings

24 Under the *Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997*, the Scottish Ministers are required to compile a list of buildings of special architectural or historic interest. Such buildings are classified into Categories A, B and C(S), in decreasing order of importance. Sustainable development is the principle underlying Government policy towards the historic environment. Planning authorities and the Scottish Ministers are required to have special regard for the desirability of preserving Listed Buildings or their settings and any features of special architectural or historic importance they possess.

25 The term 'setting' has no definition in the Act, although the Memorandum of Guidance on Listed Buildings and Conservation Areas 1998 (Memorandum; published by Historic Scotland) advises planning authorities to interpret the term broadly. The Memorandum states that a Listed Building should at all times remain the focus of its setting, and that attention should not be distracted from it by the presence of any new development. Government policy and guidance is also stated in National Planning Policy Guideline 18, Planning and the Historic Environment (NPPG 18).

Conservation Areas

26 Under the 1997 Act, areas of special architectural or historic interest can be designated as Conservation Areas, the character or appearance of which it is desirable to preserve or enhance. Planning authorities are required to consider planning applications affecting the appearance, character or setting of Conservation Areas.

SIGNIFICANCE CRITERIA

27 In evaluating site importance / sensitivity, the importance of cultural heritage resources is assessed principally according to the criteria published in NPPG5, and the Memorandum. The main thresholds of archaeological importance defined in NPPG5 are National Importance, Regional and Local Importance, and Other. Sites of National Importance comprise those sites protected by scheduling under the 1979 Act, and sites of schedulable quality. Scheduling is an ongoing process and not all sites of appropriate quality are currently scheduled; hence planning authorities maintain the Non Statutory Register of sites that are those sites of scheduleable quality but which have yet to be scheduled.

28 Sites of Regional and Local Importance are those that do not merit scheduling, but which have significance within a regional or local context. This may, for example, apply to their importance to regional or local history, or they may be the only local example of a monument type. Sites of Other Importance may comprise component parts of a landscape rich in archaeological monuments, and sites or monuments with less than local importance such as findspots with no known remains.

29 The Memorandum states that Category A Listed Buildings are of national or international importance, Category B buildings are of regional or more than local importance, and Category C(s) structures are of local importance. Historic Gardens and Designed Landscapes contained within the Inventory are considered to be nationally important. Table 1 summarises the relative importance (and therefore sensitivity) of key cultural heritage resources.

Table 1 Definitions of importance / sensitivity of cultural heritage resources

Importance	*Site types*
National	Scheduled Ancient Monuments
	Category A Listed Buildings
	Non Statutory Regiser sites (Category V - almost certain and/or C – probable)
	sites or monuments of national or international importance, either architectural or historic, or fine, little-altered examples of some particular period, style or building type
Regional	Archaeological sites and areas of distinctive regional importance
	Category B Listed Buildings
	Conservation Areas
	major examples of some period, style or building type, which may have been somewhat altered
Local	Archaeological sites and areas of local importance
	Category C(s) Listed Buildings
	lesser examples of any period, style or building type, whether as originally constructed or as a result of subsequent alteration
Other	Sites or monuments without statutory protection and with less than local importance such as findspots with no known remains
	Unlisted Buildings and townscapes of some historic or architectural interest

Assessment of significance of predicted effects and impacts

30 The type of effects and impacts from the proposed development on cultural heritage resources are divided into the following categories:

- **Direct:** where there will be a physical effect on a site. Direct effects may be caused by a range of activities associated with the construction and operation of proposed development. Construction activities may include ground-disturbing excavations for extraction foundations, cable trenches, access roads and borrow pits. In addition other disturbance, such as vehicle movement and soil or overburden bunding, may produce irreversible effects upon archaeological sites;
- **Indirect:** where the setting of a site may be affected. Indirect effects may relate to new development reducing views to or from cultural heritage sites with important landscape settings, may result from increased noise or vibration, or may cause increased fragmentation of the historic landscape and the loss of connection between its component parts. Such effects are likely to occur during the construction phase of the development, persist through the operational phase and cease after the decommissioning stage;
- **Uncertain:** where there is a risk that the works may impinge on a site, for example where it is not clear where the location or boundaries of a site lie or where the baseline condition of a site cannot be established satisfactorily.

31 Potential effects, direct and indirect, have been assessed in terms of their longevity, reversibility and nature, which allowed the magnitude of effect to be predicted for each receptor.

- **Beneficial** effects are those that contribute to the value of a site through enhancement of desirable characteristics or the introduction of new, positive attributes;
- **Neutral** effects occur where the development can be accommodated comfortably by the environment while neither contributing to nor detracting from the value of the site.
- **Adverse** effects are those that detract from the value of a site through a reduction in or disruption of valuable elements, or the introduction of new inappropriate characteristics.

32 The assessment of significance of predicted effects and impacts was undertaken using two key criteria: sensitivity of site and magnitude of effect.

33 Magnitudes of effect are assessed in the categories high, medium, low and imperceptible, and are described in Table 2.

Table 2 Criteria for classifying Magnitude of effect

Magnitude of effect	*Criteria*
High	Land take or physical damage would result in the loss of an area, features or evidence fundamental to the historic character and integrity of the site. Severance would result in the complete loss of physical integrity.
Medium	Land take or physical damage would result in the loss of an important part of the site or some important features and evidence, but not areas or features fundamental to its historic character and integrity. Severance, which may be at a secondary or peripheral level, would affect the integrity of the site. Key physical relationships would not be lost
Low	Land take, severance or physical damage would be peripheral and/or secondary and would not affect the key features of the site. The historic integrity of the site would not be significantly affected.
Imperceptible	Land take, severance or physical damage confined to a small, peripheral and/or unimportant part of the feature, and would not affect its historic integrity, or the quality of the surviving evidence.

34 Using these definitions, a combined assessment of sensitivity and magnitude has been made to determine how significant an effect is. Table 3 combines these criteria to provide an assessment of the level of significance of effect. For all direct effects and permanent indirect adverse effects, moderate or high effects are considered to be significant in terms of the *Environmental Impact Assessment Regulations (Scotland) 1999.* However, where indirect effects would be temporary and reversible in nature, low magnitude changes to baseline resulting in moderate significance effects are considered to be not significant in terms of the *Environmental Impact Assessment Regulations (Scotland) 1999*.

Table 3 Matrix for assessing significance of effect

Magnitude	*Sensitivity*			
	Other	Local	Regional	National
High	Low	Moderate	High	High
Medium	Negligible	Low	Moderate	High
Low	Negligible	Negligible	Low	Moderate
Imperceptible	Negligible	Negligible	Negligible	Low

BASELINE CONDITIONS

35 The development area for the assessment of direct physical impact on cultural heritage sites encompasses the whole of the proposed quarry site, illustrated on Figure 1.

36 In contrast the study area for the consideration of the visual impact on the cultural heritage from the proposed extraction was based on a physical distance from the centre of the proposed extraction. Data was collected on Scheduled Ancient Monuments, Categories A and B Listed Buildings, Non Statutory Register Sites and Conservation Areas within 3 km of this location.

37 Two sites of cultural heritage interest were identified within the development area from the walkover survey. There is also the potential for the presence of currently unidentified cultural heritage sites that have been obscured or significantly damaged by the prolonged agricultural use of the land.

38 Summaries of the sites are presented in Table 4 below with their location depicted in Figure 1.

Archival Sources

39 The National Monuments Record of Scotland and the West of Scotland Archaeology Service Sites and Monuments Record identified no known cultural heritage sites within the development area; however there is a substantial amount of archaeology in the local area. Within 1km of the quarry there are five known archaeological sites; these consist of three burnt mounds (NS92SW.73 .74 .75) situated to the south-east of the site, the other two are the sites of buildings marked on the 1st edition Ordnance Survey map as unroofed ruined buildings (NS92NW.44 .45), which are north-west of the site.

40 Within 2km of the development area are a further 22 known sites including six scheduled ancient monuments. These include; Black Hill Fort (SAM 2606), Fagyad Cairn (SAM 4254), a platform settlement of Craighead (SAM 4485), Netherton Cairn (SAM 4513), Craighead Barrow and Cairn (SAM 4517), Cold Chapel Settlement (SAM 4530) and the Abington Motte and Bailey (SAM 2609). There are also a Roman Temporary Camp (NS92SW.38), a Roman Road (NS92SW.48) and various enclosures, cairns, farmsteads, settlements and find spots. One of the farmsteads, Netherton Farm (NS92NW.43) is described in the Ordnance Survey Name Book as '*a very superior farm steading, two storeys high with a slated roof and attached garden'*. The Name Book also describes Duneaton Braehead, which is depicted on the 1st Edition Ordnance Survey to the immediate south-east corner of the extraction area.

41 The available pre-Ordnance Survey mapping (1745 to 1828) shows the extraction area to be open ground hillside, which continues with the Ordnance Survey mapping. On the 1st edition Ordnance Survey (1863) the site is divided into three, with a rectangular enclosure at the southwest corner, to the immediate south of the enclousure is first depiction of Dod Wood (Figure 2).

Survey

42 The survey took place on the 15th December 2006 and confirmed the development area as an open hillside used for grazing, which is divided into three by a dry stane dyke and post and wire fencing, with the remains of other stone dykes present. During the survey two sites of interest were noted, a clearance cairn (NS 9197 2541) and the remains of dry stone wall that form an enclosure (NS 9179 2539).

43 The cairn (1) was a low mound approximately 3m in diameter (Figure 3a), situated within a marshy area, consisting of angular, sub angular and sub rounded stones, the largest of which measured 400mm in size. Given the size and nature of the stones along with their close proximity to a denuded dry stone dyke, it is highly likely that the cairn is of modern origin and related to the demolition of the dyke. This however does not exclude the possibility of the modern cap of stone obscuring an older cairn of greater significance, although this is doubtful in this case as there is nothing to suggest an older precursor.

44 The enclosure (2) measured 93m by 45m, and was aligned north-east to south-west (Figure 3b). The walls of the enclosure were of dry stone construction, which are denuded rising to a maximum of 500mm in height. The northwest corner was particularly denuded, to such an extent that the line of the wall could not be followed. The enclosure is the same as the one depicted on the 1st edition Ordnance Survey 1863.

45 The topography within the non-marshy ground was very smooth and suggestive of improved pasture. Through discussions with the land owner it became clear that considerable improvement of the ground has been undertaken in recent years:

> *"Around two-thirds of the site area has been significantly regraded to remove natural undulations and borrow pits in the last 20 years. Soils are consistently shallow across the site, <300mm, and have been ploughed to rockhead every second year since around 1980. In some areas weathered rock has been ripped and mixed with soils to increase depths. Soils from the gas pipeline trench were also spread across the site to increase soil depth in 1995; rock was used in the construction of the access track." Alistair Hodge (pers. comm.)*

46 This description of a highly destructive land improvement regime correlates well with the visible site condition and is very credible. Based on this regime it is highly likely that any archaeological remains within the improved ground has been wholly disrupted and compromised by the agricultural use of this ground.

Table 4 Cultural Heritage Sites (Development Area)

Site	*NMRS*	*Site Name*	*NGR*	*Description*
1		Duneaton, Cairn	NS 9197 2541	Archaeological Feature – a walkover survey identified a clearance cairn measuring 3m in diameter. The date or origin of this feature could not be clarified; but is likely to be modern (within the past 200 years.
2		Duneaton, Enclosure	NS 9179 2539	Archaeological Feature – a walkover survey identified a enclosure of dry stone construction

External receptors

47 Table 5 lists the eight significant external cultural heritage receptors, from the corpus of sixteen, which would have partial or full views of the proposed extraction within the search area defined above. It is recognised, however, that the model is a coarse predictive tool, based as it is on bare-earth surface topography, and takes no account of obstructions to intervisibility caused by forestry and other vegetation, or by buildings or other man-made features. The sites identified by this assessment should therefore be treated as a maximum and it is likely that in reality, a lesser number of receptors would be wholly or partly intervisible with the extraction. The locations of those receptors predicted to be intervisible with at least one finished extraction face are shown on Figure 4.

48 The sites identified by the study as being potentially intervisible with elements of the proposed extraction lie predominantly to the east, southeast and southwest of the proposed extraction area. The sites are typically on hilltop or hillside locations rather than any valley floor locations.

49 These external receptors are predomianntly Scheduled Ancient Monuments, being typically prehistoric funerary, settlement and defensive sites which lie on the surrounding slopes and summits (rather than valley floor sites). There is also one Non Statutory Register site to the northwest, a potential prehistoric funerary mound.

50 There are eight significant cultural heritage features present within the assessment boundary ranges which are not considered further as they have been assessed to not be intervisible with the proposed extraction.

Table 5 Cultural Heritage Key Receptors (Visual Study Area)

No.	*Proximity (km)*	*Ref*	*Category*	*Name*	*Intervisible*	*Grid Reference*
3	1-3	HS 4513	SAM	Netherton; Cairn	Partial	NS 903247
4	1-3	HS 4517	SAM	Craighead; Barrow & Cairn	Partial	NS 907241
5	1-3	HS 2606	SAM	Black Hill; Fort	Partial	NS 908239
6	1-3	HS 4485	SAM	Craighead; Platform Settlement	No	NS 903241
7	1-3	HS 2609	SAM	Abington; Motte & Bailey	No	NS 932249
8	1-3	HS 4530	SAM	Cold Chapel; Settlement	Partial	NS 937251
9	1-3	HS 2606	SAM	Fagyad Hill; Cairn	Fully	NS 918228
10	1-3	HS 264	SAM	Arbory Hill; Fort	Partial / Fully	NS 944238
11	1-3	HS 2835	SAM	Wandel; Roman Fortlet & Camp	Slight	NS 944268
12	1-3	HS 2585	B	Clyde's Bridge; Bridge	No	NS 941267
13	1-3	WOSAS 10454	NSR	Knock Leaven; Cairn	No	NS 908260
14	1-3	WOSAS 10457	NSR	Blackstane Hill; Mound	Fully	NS 907274
15	1-3	WOSAS 10459	NSR	Roberton; Motte	No	NS 940270
16	1-3	WOSAS 10532	NSR	Cold Chapel; Roman Camp	No	NS 935249
17	1-3	WOSAS 10535	NSR	Crawfordjohn Mill; Cairn	No	NS 900245
18	1-3	WOSAS 10546	NSR	Raggengill Burn; Cairn	No	NS 935237

Key: SAM, Scheduled Ancient Monument; A, Category A Listed Building; B, Category B Listed Building, CA, Conservation Area; NSR, Non Statutory Register Sites.

MITIGATION MEASURES

51 The baseline assessment failed to identify any cultural heritage sites within the extraction area that can be considered to be significant and warrant mitigation. The identified sites (**1**)(**2**) are both considered to be at most nineteenth century in origin, but more likely from the twentieth century.

52 There is normally a credible hazard that currently unknown buried archaeological remains may exist within any extraction area. However, given the known intensive land improvement regime undertaken on the majority of this ground since at least 1980 (see above) it is considered that the archaeological protential of the ground is very low to negligible. Consequently no mitigation of the impact on this resource is recommended.

53 The impact on the external key receptors is generated by the worked quarry faces; these are partly mitigated by the existing woodland at Dod Wood. In addition a woodland strip is to be planted on a bund to the west of the proposed extraction which will suppress views into the quarry face. During reinstatement the upper bench of the face will be hydro-seeded as will the stocking/working area. These actions will all mitigate the intervisibility of the working faces during the life of the quarry and the visible profile of these features after reinstatement.

PREDICTED IMPACTS AND EFFECTS

54 The assessment of predicted impacts and effects was carried out with reference to the current design layout and using the assessment criteria detailed above, Table 6 lists the predicted effects of the proposed development on the cultural heritage sites identified within the proposed extraction area. Impacts from visual amenity impacts are considered below.

Table 6 Predicted impacts and effects on cultural heritage features

No	*Site*	*Impact Type*	*Site Sensitivity*	*Impact Magnitude*	*Significance of effect*
1	Duneaton, Cairn	d, a, p, ir	Other	High	Low
2	Duneaton, Enclosure	d, a, p, ir	Other	High	Low
	unlocated Archaeology	d, a, p, ir	Other	High	Low

Key: d, direct; i, indirect; a, adverse; n, neutral; p, permanent; t, temporary; ir, irreversible; r, reversible

Direct effects

55 Given the character of the proposed extraction, both the known sites will have a direct effect from the extraction process. The impact magnitude from the extraction work is likely to be high, but given the low sensitivity of these sites the significance of effect is low and hence mitigation of these impacts is not recommended (see Table 6).

Indirect effects

56 No indirect effects against cultural heritage sites have been predicted within the development area.

Assessment of effects on Receptors outwith the development area

57 Table 7 lists the predicted effects of the proposed development on key external receptors. All identified effects are indirect, permanent and irreversible in nature arising as a result of the visual presence of development components in the wider landscape, potentially affecting the settings of the sites. The predicted effects would arise during the stripping phase, persist throughout the operational phase of the extraction and be a lasting impact from the presence of quarry faces.

58 Effects have been assessed according to the criteria set out and taking into account the distance of the assessed site from the extraction, with intervisiblity tested at specific sites. The effects have also been considered relative to the existing environment.

Table 7 Predicted effects on external receptors

No	*Site*	*Effect Type*	*Site Sensitivity*	*Effect Magnitude*	*Distance to extraction (km)*	*Significance of effect*

3	Netherton; Cairn	i, n, p, ir	National	Imperceptible	1-3	Low
4	Craighead; Barrow & Cairn	i, n, p, ir	National	Imperceptible	1-3	Low
5	Black Hill; Fort	i, n, p, ir	National	Imperceptible	1-3	Low
8	Cold Chapel; Settlement	i, n, p, ir	National	Imperceptible	1-3	Low
9	Fagyad Hill; Cairn	i, n, p, ir	National	Imperceptible	1-3	Low
10	Arbory Hill; Fort	i, n, p, ir	National	Imperceptible	1-3	Low
11	Wandel; Roman Fortlet & Camp	i, n, p, ir	National	Imperceptible	1-3	Low
14	Blackstane Hill; Mound	i, n, p, ir	National	Imperceptible	1-3	Low

Key: d, direct; i, indirect; a, adverse; n, neutral; p, permanent; t, temporary; ir, irreversible; r, reversible

EVALUATION OF SIGNIFICANCE OF PREDICTED EFFECTS

Significant Effects

59 Significant direct effects, of a magnitude of Moderate or greater, are not anticipated against any known site. This includes the effect on the potential for currently unidentified archaeology being present within the proposed extraction area.

60 Significant effects from the visual impact are not anticipated against any key external receptors within 3km of the development area.

Non-significant effects

61 Non-significant effects from the visual impact are anticipated on eight key receptors within 3km of the proposed development area. Three of these cultural heritage sites (**3**)(**4**)(**5**) lie on a west-east ridge to the southwest of the proposed quarry, with the new quarry being in the foreground of the existing M74, along with the B7078. The visualisations from this ridge (Figure 5 for (**3**) and Figure 6 for (**5**)) clearly show the screening impact of the existing Dod Wood which will be enhanced by the additional planting to the west of the proposed extraction (especially Figure 5). At worst it is anticipated that a 5m high 200m long north-east quarry face will be visible, although this will be temporary as the maturing trees will reduce this while the hydo-seeding of this face during the reinstatement programme will green the surface.

62 The three sites to the east (**8**)(**9**)(**10**) have an even lower scale of effect mainly due to the existing presence of the M74 and Abington Services in the foreground of any views to the proposed quarry. The visualisations of the view from Cold Chapel (**8**) (Figure 7) illustrate the minimal nature of the change from the introduction of the new quarry.

63 The seventh key external receptor (**14**) lies to the north-west, below Backstane Hill. Again the visual impact from this site (Figure 8) is suppressed by the existing presence of the M74 and Abington Services in the foreground. The only visible bare ground surface will be the stocking/plant area which will be reseeded during the reinstatement. In addition Wandel Roman Fortlet & Camp (**11**) is expected to have fragmentary/slight views of the proposed quarry.

Natural and built environment moderation of effects

64 The identification of adverse effect has been made with reference to models that are derived from topographic data. This does not take into consideration the impact on line of sight from the natural and built environment that may obstruct intervisibility.

65 Some of the unconsidered impacts on line of sight are likely to change with time, both due to the seasonal nature of vegetative obstruction, changes in vegetation cover and alterations in the built environment throughout the operational life of the proposed extraction.

SUMMARY

66 This assessment was undertaken using a range of desk-based sources, consultations and reconnaissance field survey. Two cultural heritage sites have been identified by the assessment at the proposed location for the extraction; neither has been assessed to be significant enough to warrant formal mitigation. Given the past land-use history the risk of buried and unrecorded remains of archaeological significance being present has been assessed to be very low.

67 Some sixteen sites of cultural heritage significance have been identified within 3 km of the proposed development, of which eight are predicted to be intervisible with the proposed extraction. These sites

are mainly Scheduled Ancient Monuments, predominantly prehistoric funerary, settlement and defensive sites. Of these intervisible cultural heritage sites none have been identified as likely to receive a significant indirect adverse visual effect from the proposed extraction.

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