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NOSTERFIELD QUARRY DISCHARGE OF CONDITIONS

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

FEBRUARY 2024

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TARMAC

NOSTERFIELD QUARY DISCHARGE OF CONDITIONS

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

FEBRUARY 2024

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CONTENTS

APPENDICES

DRAWINGS	TITLE	SCALE
NT16388-002 Rev. B	Tree Protection Plan Sheets 1 and 2	1:1000@A0

1 INTRODUCTION

1.1 Brief

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Tarmac to undertake a BS 5837 tree survey on the site and to assess and report on the impacts on the trees and hedgerows in connection Oaklands quarry extension at Nosterfield Quarry, Bedale DL8 2QZ (Ordnance Survey grid reference SE284809). For the purpose of this report this will be referred to as the 'Site' hereafter.

1.1.2 The purpose of this report is to provide an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS). The AIA section includes an evaluation of the direct and indirect effects of the proposed mineral extraction design on the surveyed trees and hedgerows, in order to inform their protection. This includes trees and hedgerows identified within the Site, as well as those located off-site but within influencing distance of the Site. The AMS section includes specifications and methodologies for the implementation of tree and hedgerow protection measures and also provides a methodology for any proposed works that encroach within the Root Protection Areas (RPAs).

1.1.3 The BS 5837 tree survey was undertaken by Kelly Stewart, Senior Arboriculturist with Wardell Armstrong between 6th and 8th December 2023. This, in combination with the proposed mineral extraction and restoration layouts, supporting documents/drawing and any liaison we have had with the design team and the Mineral Planning Authority (MPA), forms the basis of our assessment and the specification for the protection of trees and hedgerows.

1.1.4 Planning permission has been granted for the mineral extraction on site and this report has been prepared in compliance with conditions of that permission.

1.1.5 This AIA & AMS report and attached Tree Protection Plan (TPP) accords with the methodologies and guidance set out in British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (The British Standards Institution, 2012).

1.2 Site Context

1.2.1 The Site is located to the north of the village of Nosterfield. Ing Goit is located east to west across the northern area of the site. The site is surrounded by agricultural fields with a small woodland located to the north-east of the Site with scattered trees and scrub located at various other locations around the Site. Lingham Water is located to the southeast of the Site.

1.2.2 The Site is divided into northern and southern sections by Flask lake. The northern section of the Site comprises agricultural fields bordered by hedgerows and scattered trees. The southern section of the Site can be distinguished further by the existing active quarry, with scattered trees and shrubs, and the entrance driveway lined with groups of trees.

1.3 Development Proposal

1.3.1 Planning permission (Planning Application Ref. C2/22/00251/CCA) was granted on the 9th January 2024 for a lateral extension to allow the extraction of an additional 1 million tonnes of sand and gravel, together with the rephasing of 471,000 tonnes of permitted reserves, together with final restoration on land west of Nosterfield Quarry, Nosterfield, North Yorkshire, DL8 2PD. We have yet to see the decision notice for the approved mineral extraction development, however the Council's Strategic Planning Committee report includes the following draft planning condition:

'Condition 33: *Prior to the commencement of development a Tree Protection Measures Plan must be submitted to the County Planning Authority for written approval'.*

1.3.2 This condition will need to be discharged prior to the mineral extraction development commencing on Site, which includes earthworks. As a result, this AIA and AMS report and associated Tree Protection Plan (TPP) has been prepared and submitted to enable Condition 33 to be discharged and in order to safeguard the arboricultural character of the Site in the interests of visual amenity.

1.3.3 It should be noted that other conditions are also required to be discharged prior to development commencing, and so development cannot commence after the discharge of Condition 33 alone. For further information, please refer to relevant the issued consent decision notice.

1.3.4 In order to assess the impacts of the proposed developments the following plans have been overlaid to produce the TPP:

- Oaklands Extension ES Figure 3.2 Phase 12 Extraction Ref. N051-00240-9, dated 30/06/2023 by Wardell Armstrong;
- Oaklands Extension ES Figure 3.3 Phase 13 Extraction Ref.N051-00240-10 A, dated 31/10/2023 by Wardell Armstrong;
- Oaklands Extension ES Figure 3.4 Indicative Landscape Framework Ref.N051-00240-11 D, dated 30/06/2023 by Wardell Armstrong.

1.4 Trees and the Planning Process

1.4.1 Under s197 of the Town & Country Planning Act 1990, MPAs have a legal duty to consider the protection of trees and the planting of new trees on development sites when granting planning permission. MPAs must also consider the potential effects, whether detrimental or positive, that proposed mineral developments will have on retained trees.

1.4.2 The Site is located within the administrative boundaries of the MPA, North Yorkshire Council (NYC). NYC's adopted Minerals and Waste Joint Plan includes the following relevant policies:

North Yorkshire CC, City of York, North York Moors National Park Minerals and Waste Joint Plan

Policy D07: Biodiversity and geodiversity

3) '…The loss or deterioration of irreplaceable habitats including ancient woodland or aged or veteran trees, will only be permitted where both the need for, and the benefits of the development at the proposed location clearly outweigh the impact or loss'.

National Planning Policy in England is detailed in the National Planning Policy Framework (NPPF). The last revised version of the NPPF (December 2023) includes the following four paragraphs on trees and development, with paragraph 136 giving weight to the retention and planting of trees on development sites, especially street, park trees and community orchards and paragraph 186 giving specific protection to ancient woodland, veteran and ancient trees:

NPPF Para. 136: *'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined[1], that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users'.*

[1] '*Unless, in specific cases, there are clear, justifiable and compelling reasons why this would be inappropriate'.*

NPPF Para. 180: *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland';

NPPF Para. 185: *'To protect and enhance biodiversity and geodiversity, plans should:*

(b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity'.

NPPF Para. 186: *'When determining planning applications, local planning authorities should apply the following principles:*

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees[2]) should be refused, unless there are wholly exceptional reasons[3] and a suitable compensation strategy exists';

1.4.2 Table B.1 taken from British Standard BS 5837 gives guidance on the level of information required by LPAs in order to make an informed decision on the impact of development on trees. The production of an Arboricultural Constraints Report and Plan is the first stage of assessment in the context of the planning process.

1.4.3 Even though we have not produced a standalone Arboricultural Constraints Report and Plan, WA have undertaken a tree survey in accordance with BS 5837, with this data and plan being supplied to the client to enable them to consider the arboricultural constraints for the Site. We have plotted the trees on the proposed mineral extraction and restoration layout so that the specific impacts on the trees and hedgerows can be assessed, with this informing this report and the associated TPP, which fulfils the requirement to present the impacts of the proposed layout on the trees and hedgerows that are located on and immediately adjacent to the Site.

1.4.4 When the proposed scheme is approved, it is common for the MPA to condition the protection of the retained trees and hedgerows on Site during the proposed

[2] '*Ancient or veteran tree: A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage'*.
[3] '*For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat'*.

development, which the MPA has proposed (See S1.3.1). This report and appended TPP addresses the proposed draft condition 33, showing how the retained trees and hedgerows will be protected and provides a methodology for any works within the RPAs of retained trees and hedgerows (where applicable). These steps accord with the recommendations in BS 5837 as detailed in Table B.1 as shown in Figure 1.

Table B.1 **Delivery of tree-related information into the planning system**

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions)	Existing and proposed finished levels
	Tree retention/removal plan (finalized)	Tree protection plan
	Retained trees and RPAs shown on proposed layout	Arboricultural method statement – heads of terms
	Strategic hard and soft landscape design, including species and location of new tree planting	Details for all special engineering within the RPA and other relevant construction details
	Arboricultural impact assessment	
Reserved matters/ planning conditions	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method	Arboricultural site monitoring schedule
	Dimensioned tree protection plan	Tree and landscape management plan
	Arboricultural method statement – detailed	Post-construction remedial works
	Schedule of works to retained trees, e.g. access facilitation pruning	Landscape maintenance schedule
	Detailed hard and soft landscape design	

Figure 1: BS 5837 Table B. 1

1.5 Statutory Legal Protection

1.5.1 The two main sources of protection afforded to trees are i) Conservation Area (CA) control and ii) Tree Preservation Orders (TPO).

1.5.2 Trees within Conservation Areas are protected under the Town & Country Planning Act 1990 (as amended), which affords blanket[4] protection to trees with a stem diameter of 75 mm and above when measured at 1.5 m from ground level.

1.5.3 Trees may also be protected by a TPO under the Town & Country Planning Act 1990 (as amended) and The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

1.5.4 It is a criminal offence to carry out any unauthorised works to trees that are either protected by a TPO or located within a CA, including:

[4] Protection is similar to that afforded to trees protected by TPO.

- Cutting down, uprooting or wilfully destroying a tree, or wilfully damaging, topping or lopping a tree in such a manner as to be likely to destroy it;
- Any works that contravene the provisions of a TPO; and/or
- Any works in contravention to the regulations.

1.5.5 Penalties for non-compliance of a TPO and/or CA can be unlimited, if tried in a County Court or Magistrates Court. Note, the Local Planning Authority may also decide to prosecute under the Proceeds of Crime Act 2002 in addition to prosecuting under the Town and Country Planning Act 1990.

1.5.6 It should be noted that the felling of trees prior to receiving full planning permission may also require a felling licence under the Forestry Act 1967. This requires that any persons wishing to fell 5 m^3 of trees within any three-month period (i.e. Calendar Quarters:- January to March, April to June, July to September and October to December) apply for a felling licence from the Forestry Commission. There are a number of exemptions to this requirement, with some of the more relevant exemptions including:

- Pruning trees;
- Felling fruit trees or trees growing in a garden, orchard, churchyard or designated public open space;
- Felling trees that, when measured at a height of 1.3 m from the ground, have a diameter of 8 cm or less;
- Felling trees immediately required for the purpose of carrying out development authorised by full planning permission;
- Felling necessary for the prevention of danger or the prevention or abatement of a nuisance[5] (e.g. threat/danger to a third party); and
- Felling necessary to prevent the spread of a quarantine pest or disease.

1.5.7 Other legislation that affords a lesser or indirect level of protection to trees includes the following:

- The Wildlife & Countryside Act 1981 (as amended);
- Conservation of Habitats and Species (amendment) Regulations 2019; and
- Hedgerow Regulations (1997).

[5] NB - This only applies when a real and/or immediate danger is present.

1.5.8 All of the above provide for the identification and safeguarding of flora and fauna that may be found in association with trees and woodlands.

1.6 Protected Species

1.6.1 Trees can contain features such as cavities, cracks, splits and loose bark which can offer potential habitat to species such as bats. Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) as well as the Conservation of Habitats and Species Regulations 2019 (as amended) and are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

1.6.2 Trees provide potential nesting habitat for birds and all wild UK birds and their active nests are protected under the Wildlife and Countryside Act 1981. For bird species listed on Schedule ZA1 of The Act it is an offence to take, damage or destroy their nest(s), whether active or not.

2 THE SURVEY

2.1 Desk Study – Legal Constraints

2.1.1 WA searched the NYC's website[6] on the 8th January 2024 to ascertain whether any trees within and/or immediately adjacent to the Site are protected by TPO and/or CA status.

2.1.2 None of the trees located on/immediately adjacent to the Site are protected by TPOs or CAs at this time. However, it should be noted that this situation can change as LPAs can serve TPOs at any time. Therefore, it is advisable to check the protected status of these trees again prior to undertaking any planned works.

2.1.3 WA also conducted a search using the Woodland Trust's Ancient Tree Inventory[7] and DEFRA's Magic Map Application[8] on 4th January 2024 to ascertain whether any recorded ancient trees and veteran trees, or ancient woodlands, traditional orchards, and woodpasture and parkland priority habitats are located within influencing distance of the Site.

2.1.4 The Ancient Tree Inventory does not currently contain any records of veteran or ancient trees within the Site, or within influencing distance of the site. However, the Ancient Tree Inventory is a record of trees found by professionals and enthusiasts and submitted to the Woodland Trust for inclusion on the database and therefore is not a complete record and cannot be used to rule out the presence of veteran trees within and outside Site boundaries.

2.1.5 DEFRA's Magic Map listed no ancient woodlands within the Site; however, there are areas of designated 'ancient and semi-natural woodland' and 'ancient, replanted woodland' located to the north of Long Lane, and to the northeast of Moor Lane, each approximately 1 km from the Site, but separated from the Site by the roads and fields external to the Site. These are far enough away from the Site to not be affected by the approved mineral extraction.

2.2 Field Survey

2.2.1 The update arboricultural survey was undertaken by Kelly Stewart between the 6th and 8th December 2023 using the methodology set out in BS 5837.

[6] https://www.northyorks.gov.uk/planning-and-conservation/trees-and-hedges/trees-and-hedges-hambleton/tree-preservation-orders
[7] https://ati.woodlandtrust.org.uk/
[8] https://magic.defra.gov.uk/magicmap.aspx

2.2.2 Weather conditions during the survey included heavy rain and mist. These weather conditions impeded data collection on site, extending the survey data collection period across three days. Widespread water logging/flooding and unstable ground on bunds created some access restrictions. The poor weather conditions and access issues impeded the survey, however, the survey data even when estimated gives an accurate enough representation of the surveyed trees and hedgerows for the purpose of checking the accuracy of previous survey data and to enable the survey of the areas not previously surveyed.

2.2.3 The trees were surveyed in accordance with the methodology outlined in Appendix 2.

2.2.4 Each individual surveyed tree (T), tree group (G), woodland (W) and hedgerow (H) was given a sequential reference number.

2.2.5 The trees were then classified in accordance with the BS 5837 tree quality assessment categories 'A', 'B', 'C' and 'U' (see category criteria and grading within Appendix 3). 'A' and 'B' category trees are considered as 'high' and 'moderate' quality, respectively, and are considered as a constraint to development. As such, these trees should be retained and afforded appropriate protection during development. 'C' category trees are considered to be of 'lower' quality due to their condition or 'lower' amenity value and are, therefore not usually considered a constraint to development. 'U' category trees are those in such a 'poor' condition that they cannot usually be retained within the current Site context for longer than ten years. It should be noted that in some cases, category 'U' trees may have valuable habitat/ecological value despite being in poor arboricultural condition. In such cases, where it is safe to do so, these trees may be recommended for retention and/or pruning works. Where relevant, we will bring such trees to the attention of the client. Where trees are located outside of the red and blue line Site boundaries, irrespective of their BS 5837 categorisation, these should be considered as a constraint during the Site layout design process and protected during construction, as such trees are not within the control of the Site owner.

2.2.6 Root Protection Areas (RPAs) are calculated for individual trees utilising the methodology set out in BS 5837, which is calculated by multiplying the stem diameter (measured at 1.5 m from ground level) by 12 for single-stemmed trees and a variant on this for multi-stemmed trees. For surveys in England (and outside England where it is a Local Planning Policy requirement), individual veteran trees are given a standard BS 5837 RPA and also a secondary veteran tree RPA, to accord with government's standing advice 'Ancient woodland, ancient trees and veteran trees: advice for making

planning decisions' [9] and local planning policy, which is based on a calculation of fifteen times the stem diameter or five metres beyond the crown spread, whichever is greater.

2.2.7 For tree groups, woodlands and hedgerows, the calculated RPAs are based on a set distance from the canopy edge of the tree groups, woodlands and hedgerows. This calculation is based on the largest stem diameter of the trees on the edge of the tree groups and woodlands and the crown spread measurement for these edge trees. A variant of the tree group and woodland RPA calculation is used to calculate hedgerow RPAs, with the calculation based on the largest stem diameter of the hedgerow woody plants and the hedgerow width.

2.2.8 Further details for each tree, and the groups of trees surveyed are set out in the Arboricultural Survey Schedule (see Appendix 1) and on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.

[9] https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions#veteran-trees

3 SURVEY RESULTS AND EVALUATION

3.1 Tree Population

3.1.1 The trees assessed and surveyed, which were located on and immediately adjacent to the Site, included twenty-three individual trees, twenty-seven tree groups, two woodlands and five hedgerows.

3.1.2 The survey revealed that, 26% of the individual tree population was classified as category 'A' quality, 35% as category 'B' quality, 22% as category 'C' quality and 17% as category 'U' quality. Further details of BS5837 Tree Categorisation can be found in Appendix 3.

3.1.3 A detailed description of all trees and groups of trees surveyed and recommended works can be found in the Tree Survey Schedule in Appendix 1. Tables 1 and 2 below summarises the BS 5837 quality grading of the trees found on Site, with these figures represented in graph format in Figures 2 and 3.

Table 1: Individual Trees Quality Assessment Summary

Tree Quality	A	B	C	U
Individual Trees, Identification	T2, T4, T10, T45, T1004, T1006	T5, T9, T36, T37, T40, T41, T1002, T1005	T6, T7, T38, T1001, T1003	T3, T8, T34, T35
Total	**6**	**8**	**5**	**4**

Table 2: Tree Groups & Woodland Quality Assessment Summary

Tree Quality	A	B	C	U
Tree Groups & Woodland Identification	W1	G4, G31, G1005, G1006, G1007, G1008, G1012, W1001	G1, G2, G3, G5, G6, G28, G29, G30, G32, G33, G34, G1001, G1002, G1004, G1009, G1010, G1011, G1013, G1014, G1003	None
Total	**1**	**8**	**20**	**0**

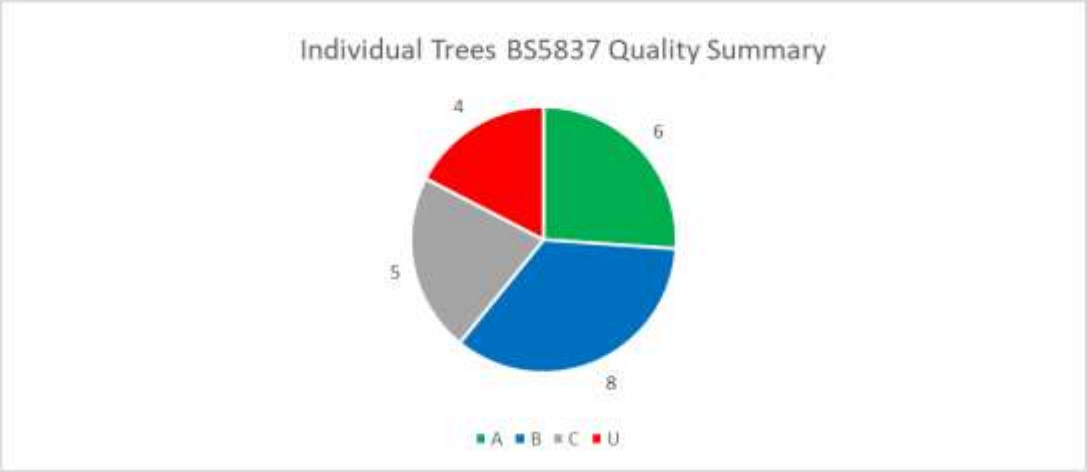


Figure 2: Overview of the BS 5837 quality of individual trees found on Site.

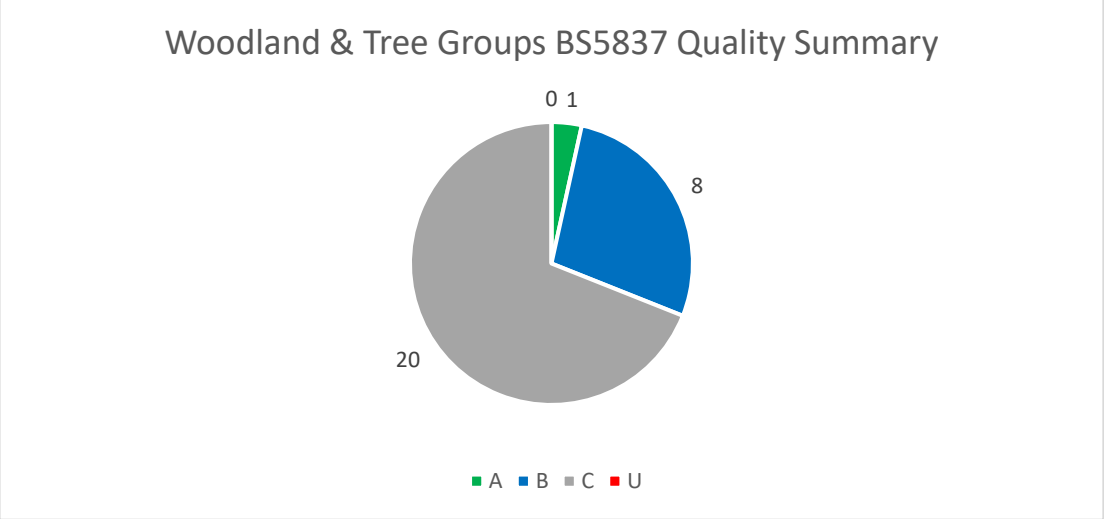


Figure 3: Overview of the BS 5837 quality of tree groups found on Site.

3.1.4 The surveyed hedgerows were not allocated a quality category, as BS 5837 does not include a methodology for the categorisation of hedgerows. However, the extent of the canopy spread and RPAs for hedges is shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.

3.1.5 An assessment of the age class of the individual tree population on Site, reveals that the individual tree population is predominantly made up of mature trees, with these accounting for 74% of the population. The remaining individual tree population is made of semi-mature trees, accounting for 4% of the population, early-mature trees accounting for 9%, late-mature trees accounting for 4% and veteran trees accounting for 9% of the population. A summary of the age class assessment for individual trees is shown in the graph below in Figure 4.

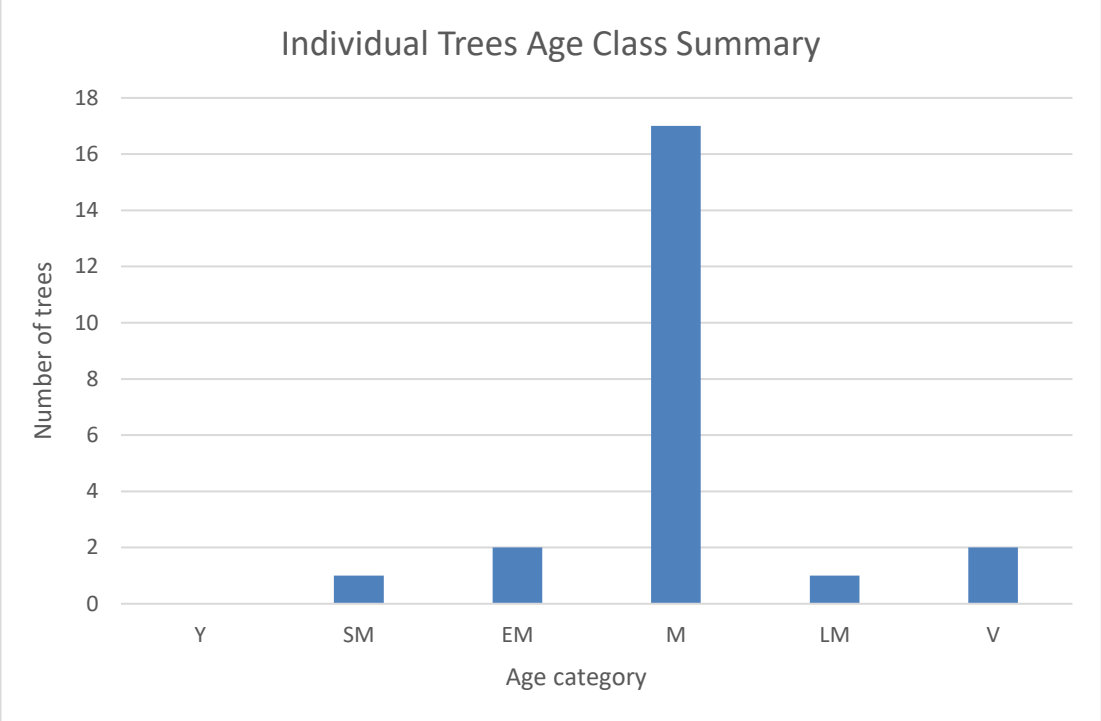


Figure 4: Individual trees age class assessment summary.

4 DEVELOPMENT IMPACT TO RETAINED TREES

4.1.1 Implementation of the proposed scheme will necessitate the removal of ten individual trees, thirteen tree groups and the partial removal of trees from a further four tree groups. Additionally, a small section is to be removed from one hedgerow. All removals and other impacts are as detailed in full in Table 3, along with proposed mitigation and compensatory measures where applicable.

4.1.2 Where the normal circular RPA of trees as described in BS5837:2012 falls within an area surfaced with tarmac or paving, sometimes we cannot be 100% sure whether roots are present below the hard surfacing for the full extent of the RPA. For this reason, it is assumed that roots are present, unless otherwise stated. Conversely, it is assumed that the highways/ footways adjacent to the Site have been constructed with a non-porous, compacted sub-base, limiting the likelihood of roots being present. In this case, RPAs have been constrained to the edge of the highway and adjusted appropriately to maintain the required area of RPA.

4.1.3 In assessing the impacts of the proposed development on the trees on and adjacent to the Site and in proposing mitigation for these impacts, the planning application for development of the Site accords with the requirements of BS 5837 and Local and National planning policies for trees and development.

Table 3: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation/Compensation**	**BS 5837 Quality Categorisation**
T7, T8, T34, T35, T36, T37, T38, T40, T41, T1002, G1, G2, G3, G4, G5, G6 (partial), G32 (partial), G33, G34 (partial), G1004, G1005, G1008, G1009 (partial), G1010, G1011, G1012, G1013, H3 (partial), scrub	The removal of trees and hedgerows to facilitate the proposed scheme due to the extent of the extraction zone.	<u>Low – Moderate Impact</u> In order to facilitate the proposed scheme, a number of trees will require removal. These include: <u>Individual Trees</u> 'B' Quality trees: T36, T37, T40, T41, T1002; 'C' quality trees: T7, T38; 'U' Quality trees: T8, T34, T35, <u>Tree Groups (In their entirety, unless otherwise stated)</u> 'C' Quality Tree Groups: G1, G2, G3, G5, G6 Partial (20.7m²), G32 Partial (1,783 m²), G33, G34 Partial (248m²), G1004, G1009 Partial (877m²), G1010, G1011, G1013; 'B' Quality Tree Groups: G4, G1005 Partial (86.4m²), G1008 Partial (503.7m²), G1012; Scrub: 814m². <u>Hedgerows</u> <u>H3 Partial removal of up to 5m.</u> The proposed removal of trees will predominantly have a low impact from an amenity perspective, as the trees to be removed are largely only visible from within the site. However, the removal of a number of category 'B' quality trees has a greater impact than the removal of lower quality trees, irrespective of their visibility. Therefore, the removal of these trees would be considered to have a moderate impact from an ecosystem service benefits perspective.	New tree planting forms part of the restoration proposals and this will help to compensate for the losses of trees and hedgerow part to the mineral extraction development.	**B, C, U**

Table 3: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation/Compensation**	**BS 5837 Quality Categorisation**
T2, T3, T4, T5, T45, T1003, T1004, G1005, G1007, G1008, W1, W1001	New footpaths proposed within retained trees RPAs, which may be hard surfaced	<u>Moderate/High Impact</u> As part of the indicative landscape scheme, new Permissive and Education Access footpaths and/or footpath upgrades are shown on the Indicative Landscape Framework plan located within the RPAs of seven individual trees of trees, three tree groups and two woodland areas, which also includes the veteran tree buffer zone for tree T2. The impact on the health and also the structural stability of these trees would be moderate to high, depending on the final proposed location and specification of these footpaths. No further details on whether these footpaths are to be surfaced or not is available at this stage, therefore we can only advise that the Project Arboriculturist is consulted when the footpath specifications and final footprints are designed and that the AMS report and Tree Protection Plan are updated accordingly when the design is finalised. The updated AMS and TPP will need to be submitted and approved by the MPA prior to the footpath upgrade works commencing.	Confirm whether the footpaths are to be include ground works and/ or hard surfacing. If the footpaths are to remain as existing e.g. grassed with no additional ground works required, then no further works required. If the footpaths are to be constructed, with ground works for the installation of a sub-base and hard surfaced wearing course installed, then the footpaths should be where possible located outside of the RPAs of all the impacted trees, to avoid damage and compaction to the soil and roots. If existing footpaths are to be upgraded, further details of the upgrades will be required. Existing sub-bases should be retained where feasible and then resurfaced with a porous wearing course. This will act to minimise damage to roots and the underlying soil. If new hard surfaced footpaths are to be constructed, these will need to be constructed as no-dig footpaths within retained trees RPAs, utilising specialist materials to enable a no-dig method of construction.	**A, B, C**

Table 3: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation/Compensation**	**BS 5837 Quality Categorisation**
G1005, G1006, G1007, G1008	Access facilitation pruning	Low Impact In order to facilitate the proposed scheme, access facilitation pruning along the entry driveway is recommended. This will affect 4 of category 'B' tree groups. The pruning works will have a low impact on the amenity value of affected trees and will not affect their long-term survival.	All pruning works are to be undertaken by a suitably qualified and insured tree work contractor, working in accordance with BS3998:2010 – *Tree work. Recommendations* and industry best practice. Trees should be selectively target pruned back to natural growth points to create 5.2m crown clearance over the entry driveway. This will reduce the likelihood of the trees being damaged by vehicles.	**B**
H1001	Excavations within RPAs	Moderate Impact Excavations are shown on the indicative landscape scheme to create a waterway/drainage route and extent of extraction zone within the RPA of retained H1001 of retained trees. The proposed works will have a moderate impact on the long-term health of these trees.	Proposed waterway/drainage route - it is recommended that where possible this should be located outside of the RPA of H1001, to avoid damage to the delicate root zone. (Root pruning): Where this is not possible the closest extent of the proposed excavation to the hedge will be marked out, enabling root pruning to take place. This will minimize damage to the roots of the retained hedgerow and prevent the 'ripping damage' associated with mechanical excavation.	**NA**
T2, T3, T4, T5, T6, T9, T10, T45, T1001, T1003, T1004,	Extraction and ground works in close proximity to trees	Low Impact The extent of excavations and proposed ground works are shown on the tree protection plan. The physical process of these works will have a low impact on the long-term health of these trees and all retained trees on Site.	Tree protection fencing is shown around trees in close proximity to the extent of extraction or ground works - T2, T3, T4, T5, T6, T9, T10 T45, T1001, T1003, T1004, T1005,	

Table 3: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation/Compensation**	**BS 5837 Quality Categorisation**
T1005, T1006, G6 (partial), G31, G32 (partial), G1001, G1002, G1003, G1005, G1008, G1009 (partial), G1014, W1, W1001, H3, H4, H5, H6 H1001		These include5 of category 'A', 6 of category 'B', 7 of category 'C' and 1 of category 'U' trees and tree groups. These also include 1 of category 'A' and 1 of category 'B' woodland areas. However, it is unknown what degree of impact will be created associated with these activities i.e. dust and chemical pollution.	T1006, G6 (partial), G31, G32 (partial), G1001, G1002, G1003, G1005, G1008, G1009 (partial), G1014, W1, W1001, H3, H4, H5, H6, H1001 require tree protection and hedgerow fencing as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B. The Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B shows Type A and Type B specification fencing, please refer to Appendix 6 for the fencing specifications. All other trees on Site are already afforded appropriate protection by their immediate environment, such as the existing hard surface and curb along the driveway New tree planting forms part of the proposals and this will help to compensate for the losses of trees to development. Replanting schemes in close proximity to extraction works proposed ahead of the completion of works should be selected from species tolerant of site conditions such as elm, field maple, lime and oak.	

5 ARBORICULTURAL METHOD STATEMENT

5.1 Tree Protection Sequence of Operations

5.1.1 Prior to all development works commencing on site, including site preparation works, the following operations shall be implemented in the manner and sequence described below in order to ensure retained trees are adequately protected during each development phase.

5.2 Tree & Hedgerow Removals

5.2.1 Trees and a section of hedgerow are to be removed to enable the mineral extraction development to proceed.

5.2.2 The trees and hedgerows to be removed are:

Tree/ Tree Group No. (Partial Removals m²)	Category	Species
T7	C	Hawthorn
T8	U	Ash
T34	U	Ash
T35	U	Ash
T36	B	Oak
T37	B	Oak
T38	C	Hawthorn
T40	B	Oak
T41	B	Oak
T1002	B	Sycamore
G1	C	Hawthorn
G2	C	Hawthorn
G3	C	Hawthorn, elder
G4	B	Hawthorn
G5	C	Hawthorn
G6 (partial – 20.7m²)	C	Hawthorn
G32 (partial – 1,783 m²)	C	Hawthorn
G33	C	Hawthorn, elder
G34 (partial – 248m²)	C	Hawthorn, elder
G1004	C	Elder
G1005 (Partial – 86.4m²)	B	Sycamore, elder, alder, common oak, hawthorn, ash
G1008 (Partial - 503.7m²)	B	Silver birch, ash, lime, willow sp., alder, hawthorn
G1009 (partial –877m²)	C	Elder, ah
G1010	C	Elder
G1011	C	Ash, elder, sycamore, willow

Tree/ Tree Group No. (Partial Removals m²)	Category	Species
G1012	B	Alder
G1013	C	Elder
H3 (Up to 5m length)	N/A	Blackthorn, hawthorn, field maple
Scrub – 814m²	N/A	Various Species

5.2.3 The tree and hedgerow removals shall ideally be undertaken outside the bird nesting season from March 1st through to August 31st. Where tree and hedgerow removals are to take place within the bird nesting season, due diligence must be taken to ensure that checks are undertaken for nesting birds and other protected species by an ecologist prior to their removal, to ensure that nesting birds are not disturbed or the nests destroyed, which would contravene the Wildlife and Countryside Act.

5.2.4 The removal of trees and hedgerow section shall be undertaken prior to the erection of the Tree Protection Fencing. Care shall be taken to avoid damaging retained trees and damaging the soil structure (i.e. compaction, rutting and smearing of the soil) within retained trees' RPAs, during the tree removal operations. No heavy machinery used for removing trees shall enter RPAs of retained trees and hedgerows as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.

5.2.5 The tree removals shall be undertaken by a qualified arborist (tree surgeon) or forestry contractor holding public liability insurance to a minimum of £1,000,000. The tree removals shall be undertaken in accordance with British Standard 3998:2010 – Tree Work Recommendations. On no account shall tree removals be undertaken by personnel that are not qualified and insured to fell trees.

5.2.6 The stumps of the removed trees will be cut to as close as possible to ground level. Where stump removal and/ or treatment is necessary and there is risk of damage to adjacent trees from the removal, such as within partially removed tree groups, the Project Arboriculturist shall be consulted and methodology for stump removal that avoids harm to adjacent trees shall be devised. The stump removals shall then only be undertaken in accordance with the Project Arboriculturists specification.

5.3 Target Note 1 – Tree & Hedgerow Pruning

5.3.1 In order to enable the mineral extraction and post development restoration, the following pruning works will be required. The locations of these are shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B with 'Target Note 1' text and/ or with red hatching. The specified pruning works are to be supervised and directed by the Project Arboriculturist (Please refer to Appendix 8 – Arboricultural site supervision and schedule form).

H1001 hawthorn, field maple, elder: This hedge is to be lateral side reduced by approximately 2-3m on its north-eastern corner as within the extraction zone and then to enable the creation of the ditch when the Site is restored.

G1005 Category 'B' sycamore, elder, alder, common oak, hawthorn, ash: This group is to be crown raised where required on its western and northern side of the crown over the access drive to provide height clearance for site vehicles and plant up to a height of 5.2 m above the height of the ground level;

G1006 Category 'B' lime, silver birch, common oak, hawthorn, elder, ash, alder, buckthorn, wild cherry: This group is to be crown raised where required on its western side over the access drive to provide height clearance for site vehicles and plant up to a height of 5.2 m above the height of the ground level;

G1007 Category 'B' sycamore, ash, elder, hawthorn, silver birch: This group is to be crown raised where required on its eastern side over the access drive to provide height clearance for site vehicles and plant up to a height of 5.2 m above the height of the ground level;

G1008 Category 'B' silver birch, ash, lime, willow sp., alder, hawthorn: This group is to be crown raised where required on its eastern side over the access drive to provide height clearance for site vehicles and plant up to a height of 5.2 m above the height of the ground level.

5.3.2 All pruning works specifications are to be agreed on Site by the Project Arboriculturist and the contractor (See Appendix 8).

5.3.3 Any other tree and hedgerow pruning works required shall be agreed in writing and/or verbally on Site with the Project Arboriculturist and/ or MPA Tree Officer, with these additional pruning works only being undertaken following approval of the works by the Project Arboriculturist and/ or MPA Tree Officer. Additional tree and hedgerow pruning works shall be in accordance with any specification restrictions detailed by the Project Arboriculturist and/ or MPA Tree Officer, either in writing or verbally on Site.

5.3.4 Tree pruning will be undertaken by a qualified arborist (tree surgeon) holding public liability insurance to a minimum of £1,000,000 and be undertaken in accordance with the recommendations in British Standard 3998:2010. On no account shall tree pruning be undertaken by un-qualified and un-insured personnel.

5.4 Target Note 2 – Root Pruning

5.4.1 The extent of the mineral extraction zone falls with the RPA of the north-eastern corner of hedgerow H1001. The Indicative Landscape Framework Plan also illustrates a proposed ditch within the RPA.

5.4.2 Following the pruning of the hedgerow at this location (Please refer to Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B with 'Target Note 2'), the extent of excavations required within the RPA shall be clearly marked on the ground and a hand dug trench shall be excavated under the supervision of the Project Arboriculturist. Where roots are encountered the Project Arboriculturist shall cleanly sever the roots to the edge of the excavated area.

5.5 Proposed Footpaths Within Retained Trees RPAs

5.5.1 Proposed Permissive and Education Access Footpaths, along with existing Permissive Footpaths are shown on the Indicative Landscape Framework Plan. At this stage the details of which of these existing and proposed footpaths are to be hard surfaced has not been finalised.

5.5.2 Where new hard surfaced footpaths are proposed or existing footpaths are to be resurfaced or hard surfaced for the first time within the RPAs of retained trees, the Project Arboriculturist shall be consulted, and the footpaths design specified that minimises harm to the impacted retained trees.

5.5.3 This AMS chapter and TPP shall be updated to detail any specialised footpath construction methods and material use where footpaths are within retained RPAs. Where footpath footprints are amended, additional Tree Protection Fencing may be required, and this will be specified accordingly.

5.6 Installation of Tree Protection Fencing

5.6.1 The retained trees and hedgerows on site shall be protected with Tree Protection Fencing (TPF) and Hedgerow Protection Fencing (HPF), which shall be erected at the locations shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B. The TPF and HPF shall be erected prior to development works commencing within 100m of the retained trees and hedgerows shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B, including site preparation and welfare facilities installation works.

5.6.2 Phased protection of trees and hedgerows within 100m of active works taking place would be adequate protection of these trees and hedgerows whilst minimising the carbon costs of not having more TPF on Site than would be required for each phase.

5.6.3 The TPF shown in pink (Type A) and HPF shown in purple (Type B) on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B shall remain in situ for the duration of active works within 100m of the trees and hedgerows which it is protecting. Active works include but is not exclusive to the mineral and overburden excavation works and associated ground works, and the TPF and HPF shall only be removed when works within 100m of the protected trees and hedgerows have been completed and following a final inspection by the Project Arboriculturist.

5.6.4 Type A TPF shall comprise of 2 m tall welded mesh panels (see Appendix 6 for diagrams of the TPF) to BS 5837: 2012 to ensure that retained trees are adequately protected during the extraction and ground works. The Tree Protection Fencing shall consist of 2 m tall welded mesh panels on rubber or concrete feet joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers shall be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray.

5.6.5 Type B HPF shall consist of 'post and wire fencing' (see Appendix 6 for diagram of the HPF). The HPF conforms to BS 1722-2:2006 to protect the extent of the retained hedgerows RPAs.

5.6.6 Care shall be taken to prevent soil compaction when installing the TPF and HPF. No vehicles or heavy plant shall enter the RPAs of the trees and hedgerows to be retained as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B. Pedestrian movements within the TPF and HPF shall be kept to a minimum, only allowing for the installation of the tree and hedgerow protection fencing. The TPF and HPF shall not be installed when the soil within the RPAs being protected is saturated after heavy rainfall. If this is the case, the installation would have to be delayed until the soil has dried out sufficiently that pedestrian movements do not unduly damage the soil structure.

5.6.7 Following the erection of the TPF and HPF, laminated copies of the tree and hedgerow protection signage as detailed in Appendix 7, shall be affixed to the TPF and HPF at 8m intervals along the fencing. These signs shall remain affixed to the TPF and HPF for the duration of the phased mineral extraction and restoration works. If the signs become

illegible, defaced or are removed, replacement signs shall be erected as soon as possible after discovering the signage is either missing or illegible.

5.6.8 The TPF and HPF and the specified measures shall be inspected in accordance with the following schedule, with the results of these inspections kept on file and forwarded to the LPA if requested to do so.

- Inspection by the Project Arboriculturist within two weeks following the erection of TPF and HPF;
- Inspection by the Quarry Site Manager on a monthly basis during active mineral and overburden excavation and restoration works;
- Inspection by the Project Arboriculturist on removal of TPP and HPF from an area outside of 100m of active works;
- Inspection by the Project Arboriculturist on completion of the mineral exaction and Site restoration works, prior to removal of all TPF and HPF from the Site.

5.6.9 Details of the inspections of the TPF and HPF shall be recorded on the Arboricultural Site Supervision Form (ASSF), which can be found in Appendix 8 and kept on file on Site by the Quarry Site Manager. If requested to do so by the MPA, copies of the completed ASSF forms will be kept onsite by the Quarry Site Manager. If requested by the MPA, copies of these forms can be sent to the MPA.

5.7 Tree Protection During Extraction and Restoration

5.7.1 The TPF and HPF shall be maintained in good order throughout the extraction and restoration works timeframe.

5.7.2 No excavations shall take place within the retained trees and hedgerows RPAs as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B, unless agreed in writing by the MPA Tree Officer or detailed in this report. Additionally, ground levels shall not be raised within these RPAs unless agreed in writing by the MPA Tree Officer or detailed in this report.

5.7.3 No machinery, vehicles or plant shall enter the fenced off tree and hedgerow RPAs as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B, unless otherwise stated in this report or agreed in writing by the MPA Tree Officer.

5.7.4 All machinery operating close to the RPAs or canopies of trees must be adequately supervised by a banksman to ensure that all parts of the machinery avoid contact with retained trees.

5.7.5 Any damage to trees and hedgerows must be reported to the Project Arboriculturist for immediate assessment.

5.7.6 No diesel, petrol, hydraulic fluid, cement dust, concrete slurry or other materials hazardous to tree health shall be deposited or be allowed to enter the retained trees and hedgerows RPAs (fenced off) as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B. Appropriate absorbent matts and/ or bunded filling areas are also to be utilised to prevent the spillage of harmful materials within the RPAs of all retained trees and hedgerows.

5.7.7 During the extraction and restoration works, any pedestrian access required within areas protected by TPF and HPF, shall only be allowed following discussions and authorisation by the Project Arboriculturist and / or MPA Tree Officer and that access accords with any restrictions placed on entering the fenced off RPAs by the Project Arboriculturist and/ or MPA Tree Officer.

5.7.8 A copy of this Arboricultural Method Statement and associated Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B shall be kept on site at all times and be available for inspection by the MPA and/ or Project Arboriculturist within normal working hours. All site personnel, including external and sub-contractors shall be informed of the tree and hedgerow protection measures and requirements of this Arboricultural Method Statement and Tree Protection Plan at the site induction stage, prior to commencing work on Site.

5.7.9 When the names and contact details relating to the Quarry Site Manager and Project Arboriculturist are finalised, these shall be submitted to the MPA Tree Officer and/ or the case Planning Officer, prior to works commencing on Site.

5.8 Dust Prevention

5.8.1 If dust from the extraction and restoration works is deposited falls onto the retained trees and hedgerows, this dust shall be removed by hosing down the trees with clean water until the dust is removed from the trees and hedgerows. This hosing down shall take place at least once a week during the extraction and restoration works if dust is deposited to prevent a build-up of dust on the retained trees and hedgerows.

5.9 Removal of Tree Protection Fencing

5.9.1 The Tree Protection Fencing (TPF) shown in pink and the Hedgerow Protection Fencing (HPF) shown in purple shall only be removed when all active extraction and restoration works have been completed within 100m of the protected trees and

hedgerows and/ or following the final inspection and authorisation by the Project Arboriculturist (See S5.6.8).

5.9.2 The removal of the TPF and HPF will be undertaken by hand. No heavy machinery shall be used, unless working from outside the RPAs of retained trees and hedgerows as shown as the fenced off areas on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B. The TPF shall not be removed when the soil within the RPAs of retained trees and hedgerows is saturated, in order to avoid compaction of the underlying soil.

5.9.3 Details of the inspections of the TPF shall be recorded on the Arboricultural Site Supervision Form, which can be found in Appendix 8 and kept on file on site by the Quarry Site Manager. Copies of the completed ASSF forms will be forwarded to the LPA Tree Officer and/ or case Planning Officer by the Site Manager if requested to do so by the LPA.

5.10 **Arboricultural Supervision**

5.10.1 In addition to the specified supervision of pruning works to retained trees (S5.3) by the Project Arboriculturist, as detailed in this report and listed in the Arboricultural Supervision Schedule in Appendix 8, there will be an initial inspection of the tree and hedgerow protection measures which shall be undertaken by the Project Arboriculturist, then monthly by the Quarry Site Manager during the active extraction and restoration works and finally before being removed, a further inspection by the Project Arboriculturist. This is to ensure that the protection measures are kept in good order and the retained trees and hedgerows are adequately protected.

5.10.2 The tree protection measures shall be inspected in accordance with the schedule listed in S5.6.8 in this report. The results of these inspections shall be recorded using the 'Arboricultural Site Supervision Form' (see Appendix 8) and kept on file by the Quarry Site Manager and forwarded to the MPA if requested to do so.

6 SUMMARY AND RECOMMENDATIONS

6.1.1 The requirements of BS 5837 have been complied with in assessing the arboricultural impacts arising from the proposed quarry extension in this report and in specifying protection for the trees and hedgerows to be retained during the approved mineral extraction and Site restoration works.

6.1.2 The Site is not within a Conversation Area and there are no trees protected by TPOs on Site. Trees T2 and T1006, both veteran trees have been afforded an extended veteran buffer zone of 15 times the diameter of the trees stems in accordance with Government best practice '*Ancient woodland, ancient trees and veteran trees: advice for making planning decisions'*[10].

6.1.3 The overall impact of the proposed quarry extension is considered to be of low to moderate impact on local amenity from an arboricultural perspective. A landscape proposal which aligns with the recommendations in this AIA/ AMS report will ensure this impact remains as low as feasible. In particular care in the location and construction of footpaths so that RPAs are not detrimentally affected will see the impact reduced. At the design stage for the footpath, the Project Arboriculturist should be consulted and when the design is finalised the AMS section of this report and the Tree Protection Plan will need to be updated. It is recommended that all new hard surfaced and existing footpaths to be hard surfaced are moved out of the RPAs of retained trees and hedgerows. If not feasible, the footpaths will need to be constructed to a no-dig specification.

6.1.4 The trees and hedgerows that are to be retained on the Site will be protected during the proposed works with Tree Protection Fencing. The protective fencing for trees will comprise the Heras fencing described in BS 5837 and the by post sand wire fencing for hedgerows. Examples of both are included in Appendix 6, with the location of the both types of protective fencing shown on the Tree Protection Plan Sheets 1 and 2 NT16388-002 Rev. B. Signage on the fencing is also specified and an example of this is included at Appendix 7.

6.1.5 An update to the AMS and TPP will be required when the footpaths design is finalised with additional Tree Protection Fencing and potentially no-dig specification detailed prior to the restoration phase commences, to ensure tree and hedgerow protection measures are fully specified and implemented.

[10] https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions

7 REFERENCES

- British Standard, BS 3998:2010 Tree work. Recommendations. (The British Standards Institution, 2010).
- British Standard, BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. (The British Standards Institution, 2012).
- NJUG Volume 4 - Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees (Issue 2:16th November 2007).
- Quantified Tree Risk Assessment User Manual, (QTRA User_Manual_V5.1.4_ 2015_01). (Incorporating extracts).
- Ministry of Housing, Communities and Local Government (2014) Tree Preservation Orders and Trees in Conservation Areas. https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas
- Forestry Commission (2007) Tree Felling – Getting Permission.
- Claus Mattheck (2007) Updated field guide for Visual Tree Assessment.
- Forestry Commission & Natural England (Updated 14th January 2022) Ancient Woodland and Veteran Trees: Protecting them from Development – Guidance. https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences#veteran-trees

Appendix 1

Tree Survey Schedule

Location: Nosterfield Quarry **(Job. No. :** NT16388 **)**

Estimated Stem Diameters & Other Measurements highlighted in this colour

Surveyor: Kelly Stewart

Weather: Heavy rain and mist

Survey Date: 6th - 8th December 2023

Item type: T (tree), **G** (group), **H** (hedge), **W** (woodland)	**Tree/ Group Ref. No.**	**Common Name**	**Height(m)**	**Crown Clearance (m) & compass direction**	**Crown Spread (m)**				**Stem Diameter @ 1.5m (mm)**					**Number of stems**	**Age Class: Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	**Condition**		**Estimated Remaining Contribution: (<10, 10+, 20+, 40+)**	**BS5837 Categorisation Grading**	**Sub Category**	**Comments**	**Preliminary management recommendations/ further works**	**BS 5837 Root Protection Area (m²)**	**BS 5837 Root Protection Radius (m)**	**Veteran Tree Root Protection Radius (m)**
					North	**East**	**South**	**West**								**Physiological Condition: G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	**Structural Condition: G** (Good), **F** (Fair), **P** (Poor)								
T	2	Oak	9	4	5	6	6.5	4.5	890					1	V	F	F	20+	A	2,3	**SEPT/OCT 2021** - In hedge line. Cavity at base on east side of stem with desiccated wood. Cavity extending into stem at 3 m above ground level on north of stem. **UPDATE 06.12.2023** - Cavity has increased to approximately m with significant central crown snap-out. Deadwood in central crown up to part size 300 mm in diameter.	If land use intensifies around tree limit access under the tree, within the limits of the canopy spread.	358	10.7	13.4
T	3	Ash	14	4	5	1	7	7	850					1	M	P	P	<10	U		**SEPT/OCT 2021** -Tree is in decline, many scaffold branches are dead. There are a number of previous large branch removals evident which are occluding. Inonotus hispidus fungal bracket on southern branch. **UPDATE 06.12.2023** - 50% crown loss from major limb failures in eastern crown, significant dieback in remaining western upper crown, 60% of remaining wood is functional. Deadwood throughout remaining crown up to 150 mm diameter in size. Heartwood decay on remaining western crown stumps. Large root flare indicative of basal decay. Root flare scarring from grazing animals. Water logging around the base of the tree. There are a number of previous large branch removals evident which are occluding. Low vigour. Inonotus hispidus fungal brackets widespread across the stem and canopy. Reduced from previous category C to U quality.	If land use intensifies around tree, monolith to 2m, when measured from ground level, prior to land use intensification. Retain pruned timber on ground in a habitat pile.	327	10.2	N/A
T	4	Oak	13	4	9	9	9	9	790					1	M	G	G	40+	A	1	**SEPT/OCT 2021** - No significant defects observed.	None required.	282	9.5	N/A

					Crown Spread (m)												Condition						
Item type: T (tree), **G** (group), **H** (hedge), **W** (woodland)	**Tree/ Group Ref. No.**	**Common Name**	**Height(m)**	**Crown Clearance (m) & compass direction**	**North**	**East**	**South**	**West**	**Stem Diameter @ 1.5m (mm)**					**Number of stems**	**Age Class: Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	**Physiological Condition: G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	**Structural Condition: G** (Good), **F** (Fair), **P** (Poor)	**Estimated Remaining Contribution: (<10, 10+, 20+, 40+)**	**BS5837 Categorisation Grading**	**Sub Category**	**Comments**	**Preliminary management recommendations/ further works**	**BS 5837 Root Protection Area (m²)**	**BS 5837 Root Protection Radius (m)**	**Veteran Tree Root Protection Radius (m)**
T	5	Field Maple	10	3	4	4	4	4	560					1	M	G	F	20+	B	1	**SEPT/OCT 2021** - Appears to have been twin stemmed at base, second stem has been lost and cavity at this point is occluding. Minor deadwood up to 75 mm in crown, low target area.	None required.	142	6.7	N/A
T	6	Ash	13	3	6	4	2	4	350					1	EM	G	F	10+	C	1,2	**SEPT/OCT 2021** - Located in dense blackthorn. Inonotus hispidus fungal fruiting body on east of stem at 4 m above ground level. If branch fails will fall into wood.	None required.	55	4.2	N/A
T	7	Hawthorn	3.5	0	3	3	3	3	200					1	M	G	G	10+	C	1	**SEPT/OCT 2021** - Remnant from old hedge row. No significant defects observed.	None required.	18	2.4	N/A
T	8	Ash	7	5	1	6	3	0	710					1	M	P	P	<10	U		**SEPT/OCT 2021** - Tree is in decline. Cavity at base of stem on east side extending beneath tree. Recently failed branch on west side at 3 m above ground level, exposing cavity in stem. **UPDATE DEC 2023** - Significant snap-out of upper crown at approximately 4m up stem. One scaffold limb remains to the southeast, with dieback and only epicormics as live growth. Low vitality.	If land use intensifies around tree, remove. Retain timber on site in habitat piles.	228	8.5	N/A
T	9	Ash	15	6	10	10	10	10	740					1	M	G	F	20+	B	1	**SEPT/OCT 2021** - Deadwood in crown up to 100 mm in diameter.	None required.	248	8.9	N/A
T	10	Hawthorn	6	2	4	4	4	4	250					1	M	G	G	40+	A	1;3	**SEPT/OCT 2021** - Unusual size for species. At edge of ditch. No significant defects observed.	None required.	28	3.0	N/A

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
T	34	Ash	11	2	4.5	6	5	7	1000					1	M	P	P	<10	U		**NOV 2021** - Attachment marks on east of stem from Inonotus hispidus brackets, one still attached in west of crown and one in east of crown. Crown is very sparse. **UPDATE 06.12.2023** - No Inonotus brackets present throughout crown and on main stem. Habitat hole on south-western stem at around 7.5m high, possibly created by a woodpecker. Deadwood in crown up to 600mm in diameter. 50% live crown ratio remaining.	None in current land use. If land use intensifies fell to ground level within 12 months. Prior to removal recommend inspection by an ecologist. Retain timber on site in habitat piles.	452	12.0	N/A
T	35	Ash	10	3	6	6	6	6	910					1	LM	P	P	<10	U		RPA has been repeatedly ploughed. Cavity with Ganoderma decay fungi fruiting body at base of stem on southern side. Area of dysfunctional wood on southern side from ground level extending to main union at 3m above ground level. Bifurcates at 2m above ground level both scaffold branches have extensive decay and tear out wounds. Both main leaders have been lost. Remaining crown is very sparse. **Update 06.12.2023**:- 95% of the crown is dead. There is substantial volumes of decaying wood in the stem, which has a good habitat value, however, the tree is structurally unsound and it is highly probable that it would fail at the stem in the near future.	Fell to ground level within 12 months. Retain timber on site in habitat piles.	375	10.9	N/A

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
T	36	Oak	12	2	9	9	9	9	850					1	M	G	F	20+	B	1,2	**SEPT/OCT 2021** - RPA has been repeatedly ploughed. Deadwood in crown up to 100mm in diameter, low target area.	None required.	327	10.2	N/A
T	37	Oak	12	3	6	7	7	7	860					1	M	G	F	20+	B	1,2	**SEPT/OCT 2021** - RPA has been repeatedly ploughed. Cavity beneath roots on west side of stem at ground level. Roots have Eiffel tower formation. Deadwood in crown up to 150mm in diameter, low target area.	None required.	335	10.3	N/A
T	38	Hawthorn	4	0	3	3	3	3	75					7	M	G	F	10+	C	1	**SEPT/OCT 2021** - No significant defects observed. Poor form tree.	None required.	18	2.4	N/A
T	40	Oak	9	3	7	7	7	7	830					1	M	G	F	20+	B	1	**SEPT/OCT 2021** - RPA has been repeatedly ploughed. 1 m lengths of deadwood in crown up to 200mm in diameter, low target area.	None required.	312	10.0	N/A
T	41	Oak	13	3	7	7	7	7	860					1	M	G	F	20+	B	1	**SEPT/OCT 2021** - RPA has been repeatedly ploughed. Large deadwood up to 250mm in diameter on western side of crown, low target area. Evidence of previous branch failures.	If land use intensifies around tree, shorten deadwood to 1m length within 6 months of intensification.	335	10.3	N/A
T	45	Oak	15	3	8	8	8	8	1090					1	M	G	G	40+	A	1	**SEPT/OCT 2021** - Deadwood in crown up to 150mm in diameter, low target area.	None required.	537	13.1	N/A
T	1001	Sycamore	8	2S	2	2	2	2	200					1	M	P	F	<10	C	2	**DEC 2023** -Unable to access tree due to gravel piles. Stem buried in substrate up to approximately 1m up the stem. Tree is in decline. Declining shoot extension growth with dieback to the majority of shoots and approximately 10% of the crown.	None required in current environment. Recommend the tree is removed prior to gravel being removed from around the base of the tree.	18	2.4	N/A

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
T	1002	Sycamore	11.5	2W	8	7.5	7.5	7.5	1020					1	M	G	F	20+	B	2	**DEC 2023** - Tree location at a lower ground level compared to its surroundings. Ground disturbance within the limits of the RPA. Ground level changes. Two central leaders bifurcate at 6m with included bark. Minor deadwood in crown. Mechanical damage and scar to underside of eastern limb, occluding well.	None required in current environment	470	12.2	N/A
T	1003	Alder	5	0	2.5	2	2	2.5	100					6	EM	G	F	10+	C	2	**DEC 2023** - Growing on the north side of PRoW outside the site fencing, outside site boundary.	None required in current environment	4.5	2.9	N/A
T	1004	Common Oak	4.5	1S	2	2	2	2	190					1	SM	G	G	40+	A	1	**DEC 2023** - Growing on the north side of PRoW outside the site fencing, outside site boundary. Good form.	None required in current environment	16	2.3	N/A
T	1005	Ash	12	0	7	7	7	7.5	1010					1	M	G	F	20+	B	2	**DEC 2023** - Located along historic field boundary. Co-dominant stems from 1.5m high, creating U shaped cup with an elder seedling growing within, possibly suggesting some early decay. Large reaction wood growth 'ears' at the union. Included bark likley. There is a 15cm lateral crack to the northern side of the union suggesting some union failure has begun. At 5m high, old branch scars are occluding well, however these are located towards the inner crown at a point which may have previously offered bracing to the union below from a scaffolding growth habit. Minor hanging deadwood in northern and eastern crown up to 15cm diameter. Northern canopy limb failure. No obvious signs of Ash Dieback Disease. Excavation in north side of root zone. Some exposed roots. Historic root damage to buttress roots probably from grazing. Stones embedded within the structural roots. Numerous rabbit burrows in root zone.	Monitor especially after high winds. If land use intensifies within falling distance of tree, recommend undertakeing a full safety inspection and risk assessment to ascertain extent of union failure and decay and thus any work required to reduce risk associated with the tree to an acceptable level.	461	12.1	N/A

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
T	1006	Hawthorn	6	0	1.5	1.5	1.5	1.5	600					1	V	F	P	10+	A	3	**DEC 2023** - Mature tree located close to hedge boundary. Probably storm damaged. Snapped/severed/partiality decayed northern structural roots, with partial whole tree failure. Root plate is tipped, appears to now be now stabilised. Ground is soft with numerous rabbit hole excavations. Stem bifurcated at approximately 3m high. Northern and southern leaders (scaffold limbs) have exposed heart wood due to historical tear-out wounds, likely resulting from storm damage. Exposed tear out-wounds approximately 1m in length, decay wood present with some occlusion along both wounds. Southern leader has a further pruning wound below tear, occluding. Vigorous shoot growth from remaining stem and lower remaining branches. White rot fungi on decaying wood from southern base of tree up to 1m High. Eastern basal cavity. Very large girthed for the species making this tree ancient.	None required in current environment	163	7.2	9
G	1	Hawthorn	4	0	Plotted using GPS and aerial photography.				200					1	M	G	G	10+	C	1	**SEPT/OCT 2021** - Along edge of Ings Goyt, remnant hedgerow. No significant defects observed.	None required.	To edge of canopy.		
G	2	Hawthorn	4	0	Plotted using GPS and aerial photography.				200					1	M	G	G	10+	C	1,2	**SEPT/OCT 2021** - Along edge of Ings Goyt. Remnant hedgerow with some gaps.	None required.	To edge of canopy.		
G	3	Hawthorn, elder	4	0	Plotted using GPS and aerial photography.				200					1	M	G	G	10+	C	1,2	**SEPT/OCT 2021** - Along edge of Ings Goyt, remnant hedgerow. No significant defects observed.	None required.	To edge of canopy.		
G	4	Hawthorn	6	0	2	3	2	3	350					1	M	G	G	20+	B	1;3	**SEPT/OCT 2021** - Along edge of Ings Goyt, remnant hedgerow. No significant defects observed.	None required.	1.2 m beyond edge of canopy.		
G	5	Hawthorn	5	0	Plotted using GPS and aerial photography.				250					1	M	G	G	10+	C	1,2	**SEPT/OCT 2021** - Along edge of Ings Goyt, remnant hedgerow. No significant defects observed.	None required.	1.1 m beyond edge of canopy.		

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
G	6	Hawthorn	6	0	Plotted using GPS and aerial photography.	400					1	M	G	G	10+	C	1,2	**SEPT/OCT 2021** - Along edge of Ings Goyt, remnant hedgerow. No significant defects observed.	None required..	2.2 m beyond edge of canopy.		
G	28	Blackthorn, elder, hawthorn	4	0	Plotted using GPS and aerial photography.	90					1	EM	F	F	10+	C	1,2	**SEPT/OCT 2021** - Scrubby boundary group. No significant defects observed.	None required.	To edge of canopy.		
G	29	Hawthorn, blackthorn, elder	6	0	Plotted using GPS and aerial photography.	150					1	M	F	G	10+	C	1,2	**SEPT/OCT 2021** - Boundary group, remnant hedgerow. No significant defects observed.	None required.	To edge of canopy.		
G	30	Hawthorn, elder	4	0	Plotted using GPS and aerial photography.	100					1	M	G	F	10+	C	1,2	**SEPT/OCT 2021** - Boundary group, remnant hedgerow. No significant defects observed.	None required.	To edge of canopy.		
G	31	Hawthorn, elder	7	0	Plotted using GPS and aerial photography.	300					1	M	G	G	20+	B	1,2,3	**SEPT/OCT 2021** - Two lines either side of sunken area. No significant defects observed.	None required.	0.2 m beyond edge of canopy.		
G	32	Hawthorn, elder	6	0	Plotted using GPS and aerial photography.	250					1	M	G	F	20+	C	2	**SEPT/OCT 2021** - Boundary group along similar sunken area as G31. Group is sparse towards eastern end. No significant defects observed. **UPDATE DEC 2023** - Sparce group mainly comprised of scrub interspersed with woody species. Downgraded category as result.	None required.	To edge of canopy.		
G	33	Hawthorn, elder	4	0	Plotted using GPS and aerial photography.	200					1	M	G	G	10+	C	1,2,3	**SEPT/OCT 2021** - Some elder are dead. Boundary group, remnant hedgerow.	None required.	To edge of canopy.		
G	34	Hawthorn, elder	4	0	Plotted using GPS and aerial photography.	300					1	M	F	F	10+	C	1,2	**SEPT/OCT 2021** - Boundary group, remnant hedgerow. Some stems are dead, low target area.	None required.	1 m beyond edge of canopy.		
G	1001	Elder	3	0	Canopy extent plotted using GPS along the northern edge, southern edge and eastern end, remainder plotted with aerial imagery	100					1	EM	F	P	10+	C	2	**DEC 2023** - Self seeded growing on an unstable bund. Unable to fully inspect. Roots will contribute to bund stablisation in time and if self seeding throughout the entire bund Is allowed to occur.	None required in current environment. If surrounding land use changes with usage increasing, recommend remove.	To edge of canopy.		

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading		Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)			Sub Category					
G	1002	Elder, buddleia.	3	0	Plotted with GPS and manual plotting				100					1	EM	F	P	10+	C	2	**DEC 2023** - Self seeded growing on an unstable bund. Unable to fully inspect. Roots will contribute to bund stablisation in time and if self seeding throughout the entire bund Is allowed to occur.	None required in current environment. If surrounding land use changes with usage increasing, recommend remove.	To edge of canopy.		
G	1003	Elder	3	0	1.5	1.5	1.5	1.5	150					1	M	F	P	10+	C	2	**DEC 2023** - Self seeded growing on an unstable bund. Unable to fully inspect.	None required in current environment. If surrounding land use changes with usage increasing, recommend remove.	To edge of canopy.		
G	1004	Elder	3	0	Plotted northeastern edge with GPS, remaining plotted with aerial imagery.				100					1	EM	F	P	10+	C	2	**DEC 2023** - Self seeded growing on an unstable bund. Unable to fully inspect.	None required in current environment. If surrounding land use changes with usage increasing, recommend remove.	To edge of canopy.		
G	1005	Sycamore, elder, alder, common oak, hawthorn, ash.	12	0	Plotted northern and southern end with GPS, remaining plotted with aerial imagery				150					1	EM	G	G	20+	B	2	**DEC 2023** - Established group along the driveway. Canopy extends across the access road. No obvious defects. Root growth is likely restricted to the edge of the curb and tarmacked road.	Selective pruning to raise crown over entrance road to 5.2m.	0.5 m from edge of canopy		
G	1006	Lime, silver birch, common oak, hawthorn, elder, ash, alder, buckthorn, wild cherry.	12	0	Plotted northern and southern end and western edge with GPS, remaining plotted with aerial imagery.				150					1	EM	G	G	40+	B	2	**DEC 2023** - Established group along the driveway. No obvious defects apart from early Ash Dieback Disease in 70% of ash population. Root growth is likely restricted to the edge of the road.	Remove ash with Ash Dieback Disease within 1 year, and suggest replacement with native evergreen holly to improve seasonal cover and biodiversity. Selective pruning to raise crown over entrance road to 5.2 m.	0.5 m from edge of canopy		

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)									
G	1007	Sycamore, ash, elder, hawthorn, silver birch.	12	0	Plotted northern and southern end and eastern edge with GPS, remaining plotted with aerial imagery.				200					1	EM	F	F	20+	B	2	**DEC 2023** - Outside site boundary, limited access.	None required in current environment	0.5 m from edge of canopy		
G	1008	Silver birch, ash, lime, willow sp., alder, hawthorn.	11	0	Plotted northern and southern end and eastern edge with GPS, remaining plotted with aerial imagery.				150					1	EM	G	F	20+	B	2	**DEC 2023** - An established group with dense self seeding in areas. Some Ash Dieback Disease in 70% of ash population. Periodic tree failures along the edges due to exposed nature of the group as a thin section of woodland with no edge planting.	Remove ash and failed trees within 1 year, and suggest replacement with native evergreen holly to improve seasonal cover and biodiversity.	0.5 m from edge of canopy		
G	1009	Elder, ash.	4	0	Plotted northeastern edge with GPS, remaining plotted with aerial imagery.				100					1	SM	F	P	10+	C	2	**DEC 2023** - Growing on bund. Unable to access due to unstable gravel bunds.	None required in current environment. If land use surrounding group changes, i.e for extraction or disturbance of the bund, consider removal.	To edge of canopy.		
G	1010	Elder	3	0	Plotted northern and northwestern edge with GPS, reaming plotted with aerial imagery.				100					1	EM	F	P	10+	C	2	**DEC 2023** - Growing on bund. Unable to fully access due to unstable gravel bunds.	None required in current environment. If land use surrounding group changes, i.e for extraction or disturbance of the bund, consider removal.	To edge of canopy.		
G	1011	Ash, elder, sycamore, willow.	10	0	Plotted with GPS and manual plotting.				150					1	EM	F	F	10+	C	2	**DEC 2023** - Gravel piles within RPA. No obvious defects.	None required in current environment	To edge of canopy.		

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
G	1012	Alder	15.5	3S	Plotted northern, eastern and western edges with GPS, remainder plotted with aerial imagery.				800					1	M	G	G	40+	B	2	**DEC 2023** - Established prominent group. Trees are surrounded by heavy machinery, equipment and gravel piles stored within the root zone. However good health and form.	Clear root zone beneath canopy of the tree of machinery, equipment and gravel piles. This should be carried out within 1 month and when the ground is not water logged.	0.5 m from edge of canopy		
G	1013	Elder	3	0	Plotted southern edge with GPS, remaining plotted with aerial imagery.				120					1	EM	F	P	10+	C	2	**DEC 2023** - Self seeded growing on a high elevated bund. Unable to fully inspect.	None required in current environment.	To edge of canopy.		
G	1014	Holly	8	0	Plotted eastern and western ends and southern edge with GPS, remaining plotted with aerial imagery.				220					7	M	G	F	40+	C	2	**DEC 2023** - Multistemmed group growing along southern edge of hedgerow. Unremarkable group.	None required in current environment	To edge of canopy.		
H	3	Blackthorn, hawthorn, field maple	2.5	0	As per topographical survey and GPS on site.				150					1	M	G	G	40+	N/A		**SEPT/OCT 2021** - Maintained boundary hedge.	None required.	To edge of canopy.		
H	4	Hawthorn, blackthorn	2.5	0	As per topographical survey and GPS on site.				150					1	M	G	G	40+	N/A		**SEPT/OCT 2021** - Maintained boundary hedge. No significant defects observed.	None required.	To edge of canopy.		
H	5	Hawthorn	2.5		As per topographical survey and GPS on site.				100					1	M	G	G	40+	N/A		**SEPT/OCT 2021** - Maintained boundary hedge. No significant defects observed.	None required.	To edge of canopy.		
H	6	Hawthorn, blackthorn, elder	3	0	As per topographical survey and GPS on site.				200					1	M	G	G	40+	N/A		**SEPT/OCT 2021** - Hedgerow with some gaps. No significant defects observed.	None required.	1.1 m beyond edge of canopy.		
H	1001	Hawthorn, field maple, alder.	2	0	Plotted southern end, internal field edges and southern edge of northern section with GPS, remaining plotted with aerial imagery.				100					1	M	G	G	20+	N/A		**DEC 2023** - Site boundary hedge, maintained around fields, unmaintained along northern edge.	None required in current environment	To edge of canopy.		

Item type: **T** (tree), **G** (group), **H** (hedge), **W** (woodland)	Tree/ Group Ref. No.	Common Name	Height(m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)					Number of stems	Age Class: **Y** (Young), **SM** (Semi-Mature), **EM** (Early-Mature), **M** (Mature), **LM** (Late-mature), **V** (Veteran)	Condition		Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Sub Category	Comments	Preliminary management recommendations/ further works	BS 5837 Root Protection Area (m^2)	BS 5837 Root Protection Radius (m)	Veteran Tree Root Protection Radius (m)
					North	East	South	West								Physiological Condition: **G** (Good), **F** (Fair), **P** (Poor), **D** (Dead)	Structural Condition: **G** (Good), **F** (Fair), **P** (Poor)								
W	1	Ash, oak goat willow, aspen, hawthorn, blackthorn, damson	13	0	Plotted using GPS and aerial photography.				450					1	M	G	G	40+	A	1,2	**SEPT/OCT 2021** - Larger trees with boundary hedge. No significant defects observed.	None required	To edge of canopy.		
W	1001	Wild cherry, elder, willow sp., downy birch.	5	1 E	Plotted western edge with GPS, remainder plotted with aerial imagery.				120					1	SM	G	G	40+	B	2	**DEC 2023** - Woodland planting on edge of pond. Unable to access due to stock proof fencing and drainage pond. Closely planted trees with good vitality, well established. Some tree guards remaining. Overhanging public footpath. Trees are becoming overcrowded and are ready for initial stages of woodland management thinning and formative pruning near footpath.	Recommend thinning in line with good woodland management practices, selective thinning concentrating on thinning out poorer formed specimens and those growing too close together. As a part of the thinning process, select trees for removal conflicting with the public footpath where appropriate, and selective formative pruning elsewhere to improve canopy clearance along the footpath. Selective pruning along the footpath is recommended within 2 months (within the dormant season) and removals are recommended as resources allow and within 3 years.	To edge of canopy.		

Appendix 2
Survey Methodology

Appendix 2

Survey Methodology

The following process has been followed and the features of each tree, group of trees or woodland have been recorded in the Arboricultural Data Sheets (See Appendix 1):

- Each individual surveyed tree (T), tree group (G), woodland (W) and hedgerow (H) was given a sequential reference number.
- Where a number of surveyed trees formed a cohesive feature, such as groups, woodland compartments or whole woodlands, they were recorded, assessed and plotted as groups (G) or as woodland (W). Whilst not every tree within groups are surveyed, a representative sample of the largest edge trees were measured in order to be able to plot the group or woodlands crown spreads and RPAs. Where detailed plans show development proposed within a group or woodland, all trees within influencing distance of the development proposals are usually recorded, plotted and assessed.
- The surveyed trees and hedgerows were then identified by their common and/or Latin name.
- Tree height measured in metres from the stem base using a Haglof Laser Geo laser. Where the ground has a significant slope, the higher ground is selected. This informs crown/stem ratio and shading.
- Crown height/ height of lowest branches is measured in metres above ground level using a Haglof Geo laser and is an indication of the average height at which the main crown begins.
- Stem diameter is measured in millimetres at 1.5m above the adjacent ground level (upslope on sloping ground) with a standard diameter measuring tape to enable RPAs to be calculated.
- Crown spread is measured in metres using a Haglof Geo laser and taken at the four-cardinal compass points to derive an accurate representation of the crown to be plotted on the TPP.
- Age class of the tree is described as:
    - Young – Newly planted trees and self-seeded trees;
    - Semi-mature – Large nursery stock that can be newly planted or self-seeded trees still in the early stages of establishment;

  - Early mature – Trees in the first third of their life cycle which is characterised by their quickness of growth and subsequently significant increase in size;
  - Mature – Trees in the second third of their life cycle, characterised by reaching their ultimate size and slowing of annual incremental growth;
  - Late mature – Trees in the final third of their life cycle, often characterised by showing signs of decline; and
  - Veteran – Trees that show ancient tree characteristics irrespective of their age, such as crown retrenchment and decaying wood habitat.
- Physiological condition is assessed and classed as G (good), F (fair), P (poor) or D (dead). This is an indication of the health of the tree and takes into account vitality, presence of disease and dieback.
- Structural condition is assessed and classed as G (good), F (fair) or P (poor). This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.
- Life expectancy is classed as: less than 10 years (<10), at least 10 years (10+), at least twenty years (20+) or at least 40 years (40+). This is an indication of the number of years before the removal of the tree is likely to be required.
- The trees were then classified in accordance with the BS 5837 tree quality assessment categories ‘A’, ‘B’, ‘C’ and ‘U’ (see category criteria and grading within Appendix 3).
- Comments include a brief description of the tree with comments on the form, vitality, health and any significant defects that may be present.
- Recommendations for work are based on the existing land use.

Appendix 3

Tree Categorisation Method

Appendix 3

Tree Categorisation Method

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

A single tree, group or woodland can come under one or more sub-headings. This does not confer on it a higher value than a tree with a single value.

Appendix 4

General Tree Constraints

Appendix 4

General Tree Constraints

- Trees impose a constraint to development in a variety of ways. These principally include their rooting areas, referred to as Root Protection Areas (RPAs), their current and future crown spread, and their species characteristics (e.g. branch and fruit drop, production of 'honey dew', density of foliage etc). Where located on shrinkable clay soils, trees can also contribute to subsidence damage to buildings.
- Consideration should be given during the design stage to any incompatibilities between the design and tree retention. These include (but are not limited to) the effects on the amenity value provided by existing trees, working space required during construction, infrastructure/utility requirements, highway visibility requirements and foundation design to prevent the effects of subsidence.
- The RPA is calculated using the tree's diameter at 1.5m and represents the minimum area which should be left undisturbed around each retained tree to enable its survival following development.
- Tree root morphology is influenced by many factors including, but not limited to; past land use, the presence of roads, structures and underground services, drainage and soils. Any of these factors may result in non-uniform root growth and therefore result in an RPA represented as a polygon RPA that reflects suitable protection of the root system.
- The majority of tree roots are generally found within the top 600mm of soil, depending on soil types and profiles. Any disturbance or sudden changes to the rooting environment can result in damage being caused to roots and alterations to the roots physiological ability to absorb water, nutrients and undertake gaseous exchange.
- Where alterations have been made within the trees' rooting environment, the damage can often be observed within the crown of the trees, reduced vitality and increased deadwood production. Trees are likely to decline progressively, or in some circumstances may become a hazard where stability and structural integrity has been compromised by Site operations.
- The RPA must be protected by the installation of tree protection fencing prior to the commencement of development work on Site. The fencing provides a physical barrier that is secured, to prohibit activities considered detrimental to the retention of healthy trees (e.g. excavations, soil stripping, discharge of substances harmful to trees, storage of materials, fires). In addition to this, it may be necessary to install specialist temporary

ground protection which enables access within the RPA, without causing long-term detriment to the health of the tree/s.

- No traditional construction works should take place within the RPA of retained trees. However, in some circumstances and where there is an overriding requirement for construction and the retention of trees, it may be appropriate to employ techniques and use materials that allow trees to be retained, whilst enabling the construction. For hard surfacing, such as drives, roads and footways, utilising no-dig construction techniques and using three-dimensional geogrids and permeable wearing course materials may be appropriate. For built structures within RPAs, the use of pile and above ground level beam foundations and/or cantilevered engineering solutions can enable structures to be constructed within RPAs. The project arboriculturist should be consulted on the appropriateness of building within retained tree RPAs, as this is not appropriate for all trees and soil types.
- Where aerial parts of the tree crowns extend beyond the edge of the RPA, consideration should be given to protection of these parts, allowing for protection during development processes including working space. It may be appropriate to consider pruning of aerial parts to allow construction clearances and future nuisance abatement, this however must be considered by the project arboriculturist and the LPA. Where development proposals identify a need for working within the RPA/crown spread of retained trees and it can be demonstrated that retained trees remain viable, then it is important that the project arboriculturist is contacted to advise and prepare an AMS and identify appropriate stages of supervision.

Appendix 5

Report Limitations

Appendix 5

Report Limitations

- Trees are influenced by a variety of environmental variables, which can affect the health of trees causing biomechanical and physiological changes. All comments made on tree health reflects their physical condition at the time of the survey. Due to the changeable nature of trees and other site/environmental conditions, which may influence trees, the preliminary management recommendations/ further works for the surveyed trees undertaken, which can be found in Appendix 1 of this report, are only valid for a period of 12 months from the date of the Site survey (9th December 2023). These recommendations relate specifically to the general maintenance of tree health and safety and do not affect the implications of this Arboricultural Impact Assessment and therefore, the results of the survey remain valid beyond (9th December 2024).
- This AIA/AMS report and the associated TPP is based on a topographical survey plan supplied by the client. Where tree stem locations are not shown on the topographical survey, these are plotted using GPS plotting and/ or the utilisation of site features to manually plot the tree stem locations and canopy spreads for tree groups. Aerial photography is also utilised to plot tree group canopy spreads, where utilisation of GPS is not feasible. These methods provide a good representation of the surveyed trees; however. WA cannot be held responsible for inaccurate tree locations, where we are not supplied with a topographical plan showing tree locations or where trees are not shown on the topographical survey plan supplied to us by the client.
- Although comments and recommendations on the safety of particular trees may have been made, this survey is not a Tree Risk Management Survey and thus should not be treated as such. All trees were surveyed from ground level only and in a solely visual nature. However, where trees have been identified as presenting an imminent safety risk due to structural defects, this has been brought to the attention of the client and treated as a separate matter. Should trees require further detailed assessment (decay detection, aerial inspections) and do not present an imminent safety risk, the information will be detailed within the survey schedules.
- Any management recommendations have been made in accordance with BS3998: 2010 Tree Works – Recommendations; and/or industry best practice. Works have been recommended in accordance with any statutory obligations on the landowners or occupiers.

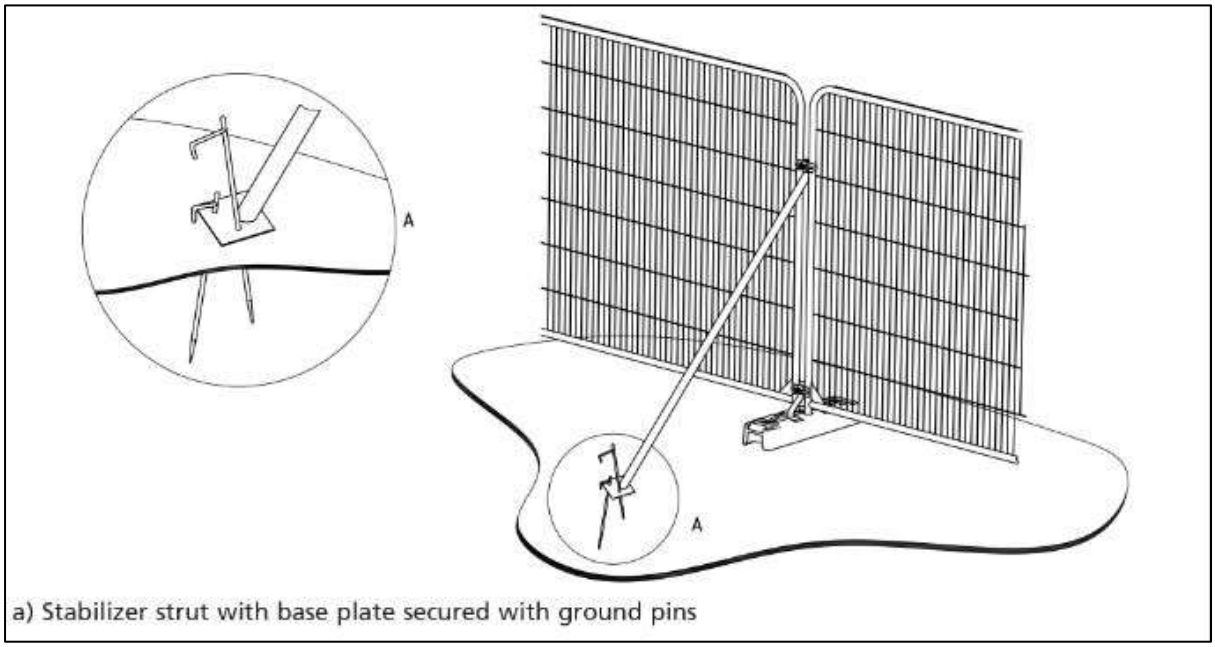
- This survey did not include an ecological survey of vegetation or habitat areas. Any ecological issues incidentally observed during the survey are reported on in the tree schedule.
- For the purpose of this report no samples were obtained from Site for analysis or any other reason.
- The survey did not include soil sampling or assessment.

Appendix 6

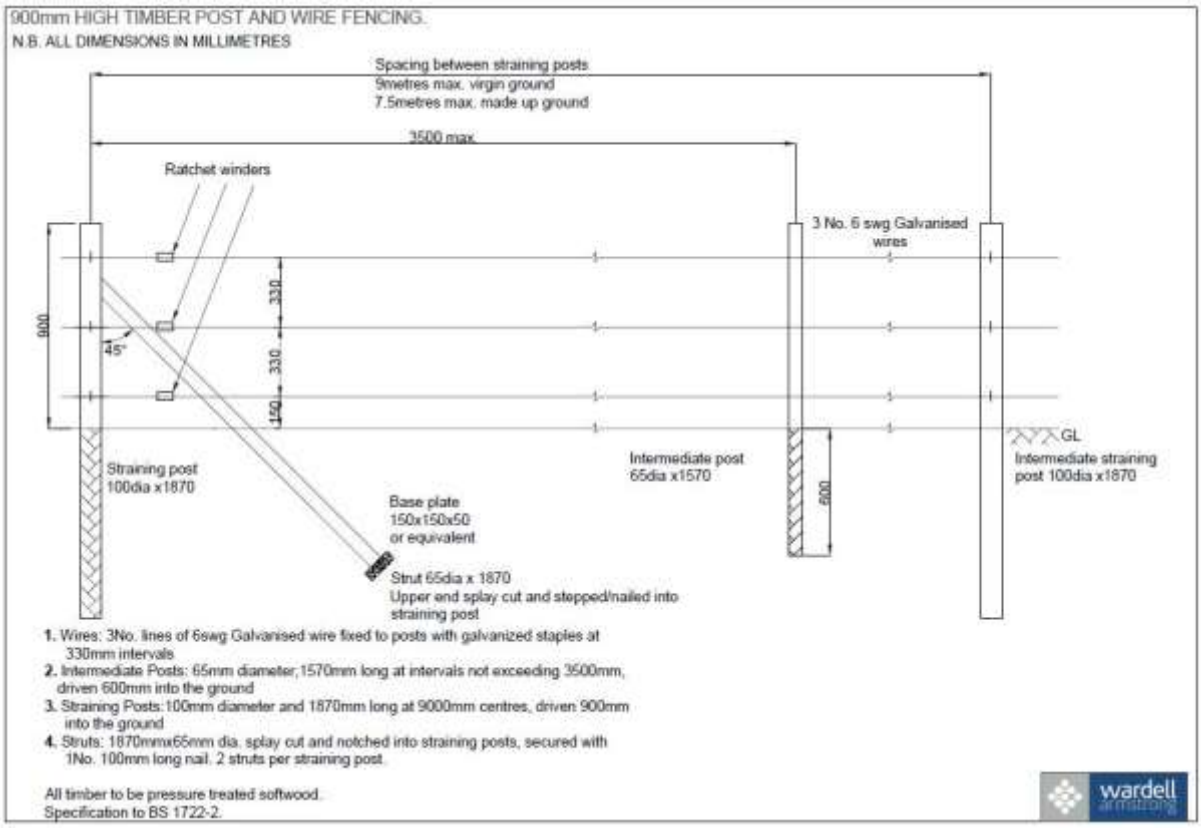
Tree Protection Fencing

Appendix 6

Tree & Hedgerow Protection Fencing



Tree Protection Fencing



Hedgerow Protection Fencing

Appendix 7

Tree Protection Signage

Appendix 7

Tree & Hedgerow Protection Signage

Appendix 8

Arboricultural Site Supervision Schedule and Form

Site Name – Nosterfield	Planning Ref: TBC	
Project Arboriculturist	Name: TBC	Contact Number: TBC
Site Manager	Name: TBC	Contact Number: TBC

Activity	Description	Person Responsible	Signed	Date
Tree Removals	Trees and hedgerow section to be removed as detailed in S5.2 in the AIA/AMS report Ref. NT16388-0004 V1.0 and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Quarry Site Manager / Arborist (Tree Surgeon) Contractor		
Tree Pruning	Trees and hedgerow to be pruned, with pruning agreed on site between the Project Arboriculturist and Contractor as detailed in S5.3 in the AIA/AMS report Ref. NT16388-0004 V1.0 and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Project Arboriculturist/ Arborist (Tree Surgeon) Contractor / Quarry Site Manager		
Hedgerow Root Pruning	Hedgerow Ref. H1001 to be root pruned as detailed in S5.4 in the AIA/AMS report Ref. NT16388-0004 V1.0 and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Project Arboriculturist/ Contractor/ Quarry Site Manager		
Footpath Design	Prior to the footpath design being finalised, the Project Arboriculturist to be consulted and the AMS chapter and Tree Protection Plan to be updated as detailed in S5.5 in the AIA/AMS report Ref. NT16388-0004 V2.0.	Footpath Designer/ Project Arboriculturist/ Client		

Site Name – Nosterfield	Planning Ref: TBC	
Project Arboriculturist	Name: TBC	Contact Number: TBC
Site Manager	Name: TBC	Contact Number: TBC

Activity	Description	Person Responsible	Signed	Date
Installation of Tree & Hedgerow Protection Fencing	Tree & Hedgerow Protection Fencing to be installed prior to active excavation and ground works commencing within 100m of trees and hedgerows to be protected, as detailed in S5.6 in the AIA/ AMS report and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Fencing Contractor/ Quarry Site Manager		
Tree & Hedgerow Protection Fencing Inspection	Within 2 weeks of the installation of the phased Tree & Hedgerow Protection Fencing to check its location and integrity. The fencing shall be inspected as detailed in S5.6.8 in the AIA/ AMS report and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Project Arboriculturist/ Quarry Site Manager		
Tree & Hedgerow Protection Fencing Inspection	Monthly inspections of the Tree & Hedgerow Protection Fencing to check its location and integrity. The fencing shall be inspected as detailed in S5.6.8 in the AIA/ AMS report and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Quarry Site Manager		

Site Name – Nosterfield	Planning Ref: TBC	
Project Arboriculturist	Name: TBC	Contact Number: TBC
Site Manager	Name: TBC	Contact Number: TBC

Activity	**Description**	**Person Responsible**	**Signed**	**Date**
Tree & Hedgerow Protection During Extraction & Restoration	Adherence with S5.7 in the AIA/ AMS report and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B to be complied with during the extraction and site restoration works.	Quarry Site Manager		
Dust Management	If dust from the extraction and restoration works covers retained trees and hedgerows those trees to be hosed to clear the dust as detailed in S5.8 in the AIA/ AMS report	Quarry Site Manager		
Tree & Hedgerow Protection Fencing Inspection	Following the final completion of the mineral extraction and site restoration for each phased part of the Site, the Tree & Hedgerow Protection Fencing is to be checked for its location and integrity prior to its removal as detailed in S5.6.8 in the AIA/ AMS report and as shown on the Tree Protection Plan Sheets 1 and 2 Ref. NT16388-002 Rev. B.	Project Arboriculturist/ Quarry Site Manager		

Wardell Armstrong
Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom
Telephone: +44 (0)1782 276700 www.wardell-armstrong.com

ARBORICULTURAL SITE SUPERVISION

Planning Ref No:

Wardell Armstrong Ref. No. NT16388

Developer/ Client: Tarmac

Site Address: Oaklands quarry extension at Nosterfield Quarry, Bedale

Site Agent:

Visit Date:

Arboricultural Supervisor:

Site Supervision

Was all Tree Protection Fencing and/ or ground protection measures in place? Yes ☐ No ☐

Was any evidence of damage to trees and/ or soil within the fenced off Construction Exclusion Zones? Yes ☐ No ☐

Details:

Are any amendments proposed to the approved plans or specifications? Yes ☐ No ☐

Details:

Signed: ***Signed:***

(For and on behalf of Wardell Armstrong LLP) (For and on behalf of _____)

Circulation:

Wardell Armstrong LLP	☐
Developer Head Office	☐
Site Agent/ Manager	☐
Local Planning Authority	☐
Architect	☐

Wardell Armstrong
Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom
Telephone: +44 (0)1782 276700 www.wardell-armstrong.com

Further Comments:

Appendix 9

Glossary of Common Terms Used in Arboriculture

Appendix 9

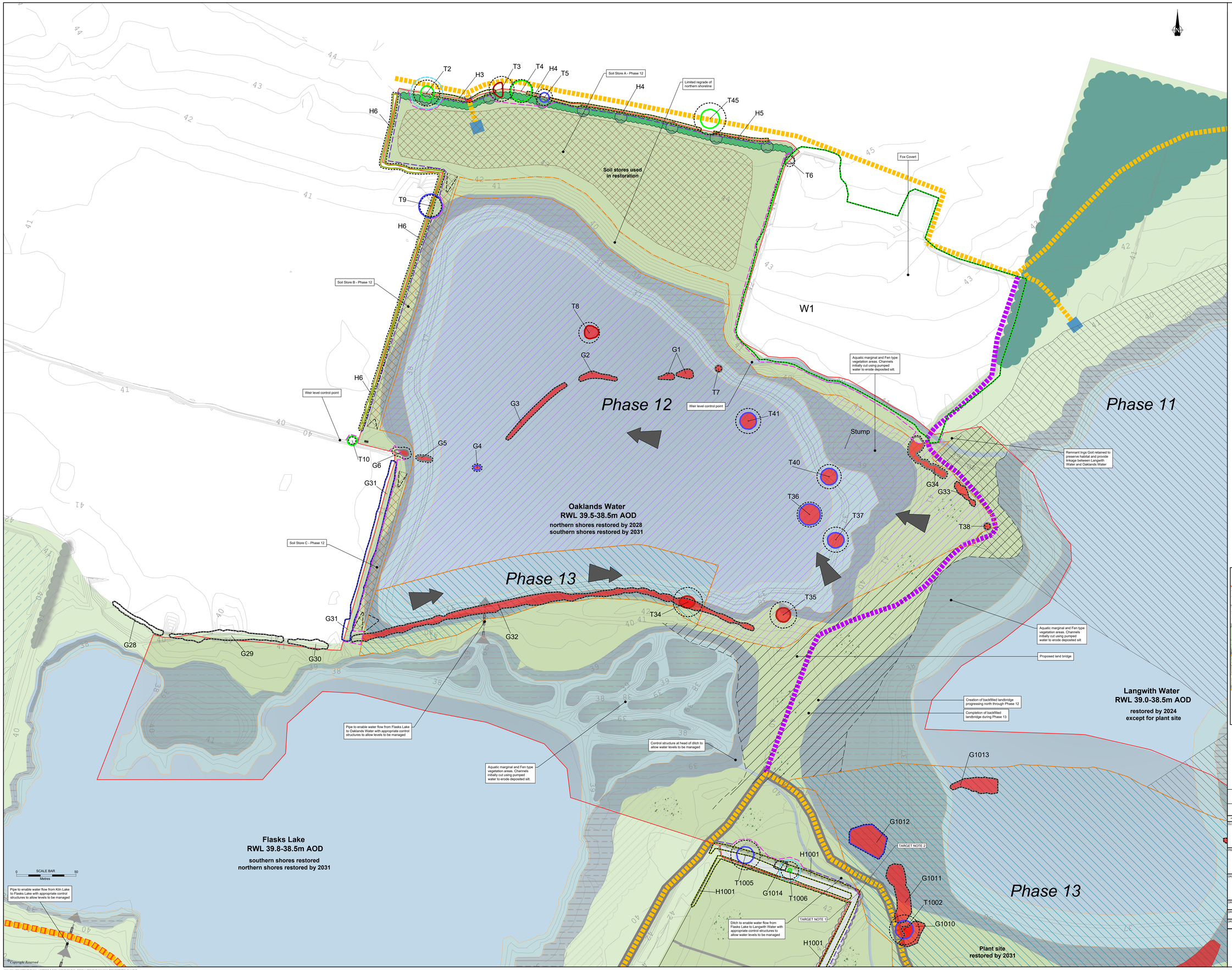
Glossary of Common Terms Used in Arboriculture

Abscission. The shedding of a leaf or other short-lived part of a woody plant.
Abiotic. Pertaining to non-living agent's e.g. environmental factors.
Absorptive Roots. Non-woody short-lived roots, generally having a diameter less than one millimetre, the primary function of which is the uptake of water and nutrients.
Access Facilitation Pruning. One off pruning operation to provide access for development operation. Pruning that will not be detrimental to trees health or amenity.
Arboricultural Method Statement (AMS). A methodology for the implementation of development where encroachment within the RPA has the potential to cause damage or loss of retained trees.
Arboriculturist. Someone who through relevant training and experience has gained knowledge in the expertise of trees.
Adaptive Growth. The process by where wood formation rates increasing in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium.
Adaptive Roots. The adaptation of existing roots; or a production of new roots in response to damage or decay.
Adventitious Buds, Roots, Shoots. Which grow in other than primary apical control.
Anchorage. The process in which a tree uses its roots system to support itself within the soil structure.
Ancient: A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species.
Arisings. Parts of the tree that has been removed for disposal, branches, leaves, roots etc.
Canker. Area of dead cambium killed by overlying pathogenic tissues.
Cavity. A hole in the woody structure of the tree; often caused through decay.
Cleaning Out. The removal of dead, diseased crossing branches, damaged branches and alien structures.
Competent Person. Person with training and experience in accordance with the proposed matter being addressed, having an understanding of a particular matter being approached.
Condition. An indication of the physiological vitality of a tree, but not the stability of a tree.
Construction. A Site based operation that has the potential to affect retained trees.
Construction Exclusion Zone. An area based on the RPA from which construction activity is prohibited.
Coppicing. Removal of all aerial parts of the tree leaving a stump for regeneration of new shoot.
Crown/Canopy. The parts of the tree that supports the leaves.
Crown Lifting. The removal of limbs and small branches to a specified height above ground level.
Crown Thinning. The removal of a proportion of secondary branch growth throughout the crown to produce an even density well balanced crown structure.
Crown Reduction/Reshaping. Removal in the height to a specified description to maintain a flowing crown structure.
Deadwood. Non-functional branches which no longer support natural growing conditions of the tree but may be beneficial for the support of habitats and species, possibly including rare saproxylic invertebrates. Thus, may also be referred to as 'Decaying Wood Habitat' or 'Dysfunctional wood'. Size ranges for deadwood referred to in this report and/or Appendix 1: - Small (<75 mm diameter), Medium (76 – 150 mm), Large (151-

300) mm and Very large >301 mm. For some species such as oak etc, the risk of deadwood falling from the tree can be lesser than for other species, due to the variety of wood strengths of different tree species.
Defect. Any area of the tree that no longer has an optimal mechanical uniformity of stress. Defects may or may not affect the long-term retention of the tree(s), depending upon severity, the likelihood of the defect(s) failing and the location of the tree(s) (Target).
Dieback. Death of woody parts of the tree starting at distal ends of the tree.
Disease. Damage occurring to living organisms as a result of pathogenic micro-organisms.
Distal. Furthest distance away from the main body of the tree.
Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood.
Epicormic Growth. Growth from dormant or adventitious buds, not developing from the first shoot.
Girdling Roots. A circling root which constricts the stem or roots, with the potential to cause death and the restriction of flow within the phloem.
Heartwood. Dysfunctional xylem which no longer has conductive properties, but which has become an integral structural part of the tree.
Heave. The swelling of shrinkable clay soils, often when vegetation has been removed allowing soil rehydration to develop, with the potential for listing structures (e.g. walls).
Included Bark/Acute Forks. Face to face contact of bark usually at fork unions, or branch unions.
Lopping/Topping. A term used to describe the removal of large sized branches
Monolith. Removing some or most of the trees crown and sometimes the upper stem, in order to retain as much of the tree as standing deadwood habitat for ecological reasons.
Pathogen. A micro-organism that causes disease within another organism.
Phytotoxic. Toxic to plants.
Pollarding. The removal of the tree canopy to produce knuckles where new growth develops and is removed cyclically usually performed on young trees.
Pruning. Selective removal of parts of the tree to achieve a desired outcome.
Root Protection Area (RPA). An area around a tree identified by multiplying the stem diameter at 1.5 m from ground level by 12 to produce a radial area or rooting volume around a tree to be protected Ref. BS 5837.
Service. Any above and below ground structure or apparatus for utility provision.
Size of part. Relating to risk assessments, identifying the size of the hazard, or parts of a tree which may cause harm if failure occurs.
Stem(s). The main structure from the ground up supporting the crown.
Stress. In plants, the physiological depletion as a result of environmental influences.
Structure. A manufactured object, such as building, roads, path, wall or excavated structures.
Structural Roots. The primary larger diameter roots which hold and support the aerial parts of the tree.
Subsidence. The shrinkage of soil through the absorption of water via vegetation and the sinking effects on surrounding architectural structures.
Targets. In risk assessment, persons or property at risk of harm as a result of a hazard (falling tree, branch, etc.).
Transitioning Veteran Trees: Trees with some veteran features, but not sufficient veteran features to be considered full veteran trees. They contribute to the veteran tree resource and, through the ageing process are expected to become true veterans in time, before which they offer bridge and continuity habitat for important saproxylic invertebrates and fungi.

Tree Protection Plan (TPP). A scaled drawing informed by descriptive text where necessary, based upon finalised Site proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree. Tree that, by recognized criteria, shows features of biological, cultural or aesthetic characteristics of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.
Windthrow. The blowing over a tree at its roots.

DRAWING



KEY

- SITE BOUNDARY
- HEDGE
- SCRUB
- TREES REMOVED DUE TO CONDITION AND/OR TO ENABLE DEVELOPMENT
- EXTENT OF PRUNING
- LOCATION OF TREE PROTECTION FENCING - TYPE A
- LOCATION OF HEDGEROW PROTECTION FENCING - TYPE B

TREES

Quality categories based on BS5837:2012 Trees in relation to design, demolition and construction - Recommendations
RPA - Root Protection Area
Where RPA is not visible it extends to the same distance as the canopy.
The original of this drawing was produced in colour - a monochrome copy should not be relied upon

- CATEGORY A CROWN SPREAD
- CATEGORY B CROWN SPREAD
- CATEGORY C CROWN SPREAD
- CATEGORY U CROWN SPREAD
- ROOT PROTECTION AREA
- VETERAN TREE BUFFER ZONE
- T1/G1/W1/H1 TREE/TREE GROUP/ WOODLAND/HEDGE NUMBER

KEY - PHASE EXTRACTION

- PHASE 11
- PHASE 12
- PHASE 13
- EXTRACTION LIMIT
- DIRECTION OF WORKING
- LANDBRIDGE

KEY - INDICATIVE LANDSCAPE FRAMEWORK

OAKLANDS EXTENSION PROPOSED RESTORATION

- DITCH
- WADER SCRAPES
- SPECIES-RICH GRASSLAND
- WATERBODY
- MARGINAL SHALLOW WATER
- AQUATIC MARGINAL AND FEN TYPE VEGETATION
- ACCESS ROAD
- PERMISSIVE FOOTPATH
- EDUCATIONAL ACCESS ONLY IN CONTROL OF APPROPRIATE CONSERVATION BODY
- ROUTE FOR MACHINERY
- VIEWING POINTS
- HEDGEROW WITH OCCASIONAL TREES

RESTORED - COMPLETE OR ONGOING

- WOODLAND
- NATIVE MIXED BROADLEAVED WOODLAND (NATURAL PROGRESSION - NOT FORMALISED)
- HEDGEROW WITH OCCASIONAL TREES
- WET CARR WOODLAND
- SPECIES-RICH GRASSLAND
- WATERBODY
- AQUATIC MARGINAL AND FEN TYPE VEGETATION
- REEDBEDS
- MARGINAL SHALLOW WATER
- MAGNESIUM LIMESTONE GRASSLAND
- AGRICULTURAL FIELD
- WOODLAND EXCLUDED VIA THE APPROPRIATE PROCESS (STRATEGIC MANAGEMENT GROUP AND PLANNING AUTHORITY)

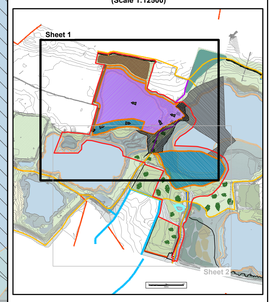
EXISTING

- WOODLAND
- PUBLIC RIGHT OF WAY
- PERMISSIVE FOOTPATHS
- RWL RESTING WATER LEVEL

REFERENCED DRAWING(S):

N051-00240-9 A FIGURE 3.2 PHASE 12 EXTRACTION
N051-00240-10 A FIGURE 3.3 PHASE 13 EXTRACTION
N051-00240-11 D FIGURE 3.4 INDICATIVE LANDSCAPE FRAMEWORK

SHEET OVERVIEW
(Scale 1:12500)



REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
B	Tree Protection Fencing changed to Type A and Type B	27/02/24	MAB	KS	MS
A	FIRST ISSUE	09/02/24	MAB	KS	MS

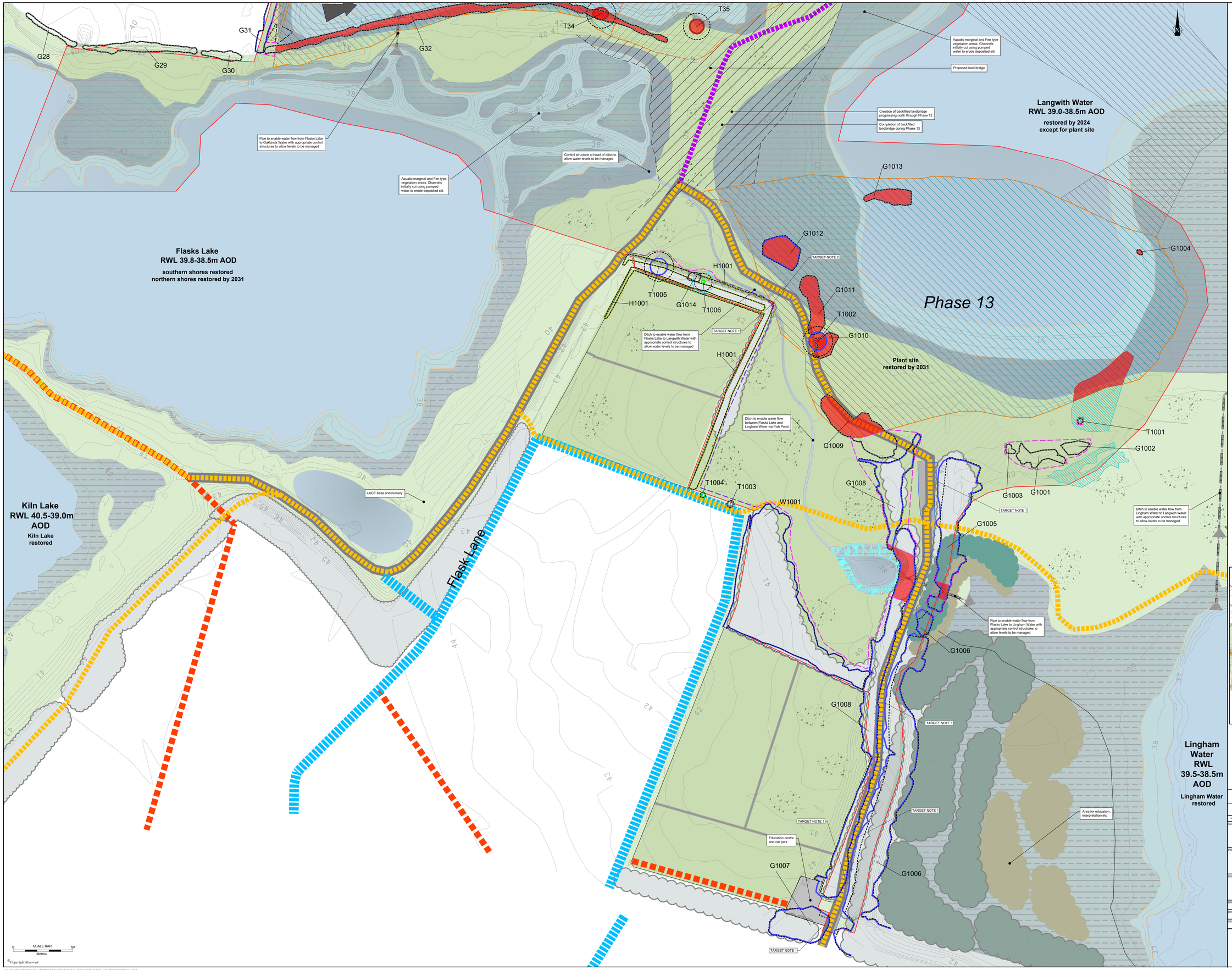
CLIENT: TARMAC A CRH COMPANY

PROJECT: NOSTERFIELD QUARRY

DRAWING TITLE: TREE PROTECTION PLAN SHEET 1 OF 2

ORG No.	NT16388-002	REV	B
ORG SIZE	A0	SCALE	1:1000
DATE	15/12/2023		
DRAWN BY	MAB	CHECKED BY	KS
APPROVED BY	MS		

wardell armstrong



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- WATERBODY
- MARGINAL SHALLOW WATER
- AQUATIC MARGINAL AND FEN TYPE VEGETATION
- ACCESS ROAD
- PERMISSIVE FOOTPATH
- EDUCATIONAL ACCESS ONLY IN CONTROL OF APPROPRIATE CONSERVATION BODY
- ROUTE FOR MACHINERY
- VIEWING POINTS
- HEDGEROW WITH OCCASIONAL TREES

RESTORED - COMPLETE OR ONGOING

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- REEDBEDS
- MARGINAL SHALLOW WATER
- MAGNESIUM LIMESTONE GRASSLAND
- AGRICULTURAL FIELD
- WOODLAND EXCLUDED VIA THE APPROPRIATE PROCESS (STRATEGIC MANAGEMENT GROUP AND PLANNING AUTHORITY)

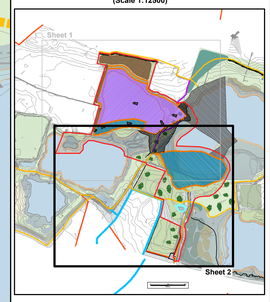
EXISTING

- WOODLAND
- PUBLIC RIGHT OF WAY
- PERMISSIVE FOOTPATHS
- RWL RESTING WATER LEVEL

REFERENCED DRAWING(S):

N051-00240-9-A FIGURE 3.2 PHASE 12 EXTRACTION
N051-00240-10-A FIGURE 3.3 PHASE 13 EXTRACTION
N051-00240-11 D FIGURE 3.4 INDICATIVE LANDSCAPE FRAMEWORK

SHEET OVERVIEW
(Scale 1:12500)



REVISION	DETAILS	DRAWN	CHKD	APPD
B	Tree Protection Fencing changed to Type A and Type B	STG/CH	MAB	KS	MS
A	FIRST ISSUE	SEE/CH	MAB	KS	MS

CLIENT

TARMAC
A CRH COMPANY

PROJECT

NOSTERFIELD QUARRY

DRAWING TITLE

TREE PROTECTION PLAN
SHEET 2 OF 2

DRG No.	NT16388-002	REV	B
DRG SIZE	A0	SCALE	1:1000
DATE	15/12/2023		
DRAWN BY	MAB	CHECKED BY	KS
APPROVED BY	MS		

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