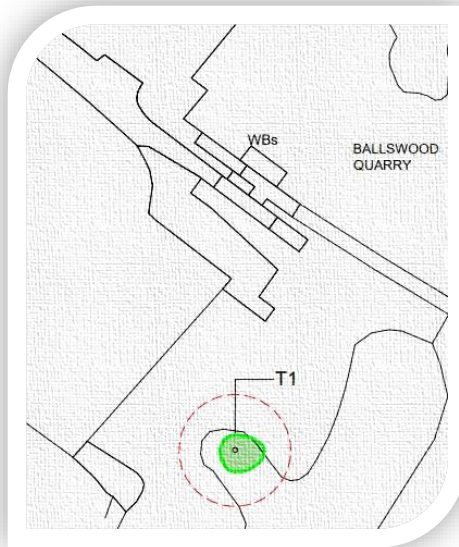




Specialist Tree Surgery Services

BS 5837:20 12
PRE-DEVELOPMENT TREE CONDITION SURVEY
& AERIAL INSPECTION



RELATING TO
**T1 AT BALLSWOOD QUARRY,
WREXHAM**

PREPARED FOR:
KEDD LTD
on behalf of
CHESHIRE & NORTH WALES SAND & GRAVEL LTD

REFERENCE:
TS116 - Issue 002

February 2022

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BS 5837:2012 PRE-DEVELOPMENT TREE CONDITION SURVEY

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1.1 Introduction

- 1.1.1 access2trees Limited offers a range of services to meet your specific needs from tree surveying to tree surgery, as well as site clearance, stump grinding and replanting. We are NPTC (National Proficiency Tests Council) qualified and both James and Amy Plaskett are qualified Lantra Professional Tree Inspectors.

1.2 Instructions to Brief

- 1.2.1 access2trees have been instructed by Kedd Ltd, on behalf of their client Cheshire & North Wales Sand & Gravel Ltd to undertake an aerial tree inspection of T1 at Ballswood Quarry off Gegin Lane in Wrexham, LL12 0NU.
- 1.2.2 An aerial inspection is required to assess the condition of the tree in detail at height. The information gathered will be used to help assess the potential impact to the tree which may arise through proposals to alter the extraction boundary of the quarry.
- 1.2.3 The site is located within the administrative area of Wrexham County Borough Council, at grid reference Easting: 334596, Northing: 356212, and 'what3words' (approximate) reference: 'blurs.torn.shop'.
- 1.2.4 The survey is in accordance with requirements set out in British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction: Recommendations'.

1.3 Limitations

- 1.3.1 Trees are living organisms subject to change and best practice dictates they are inspected on an annual basis for reasons of safety, although longer inspection timescales may be given in the report where it is deemed necessary.
- 1.3.2 This survey should be regarded as an initial appraisal and observations, assessments or recommendations relating to foundation design, material specification or project design and methods of working are beyond the scope of the study.

- 1.3.3 Tree rooting characteristics and soils are both enormously variable as are their interactions. This makes attempts to quantify subsidence risk assessment impossible. No effort has been made to assess subsidence risk potential nor should any be construed. Obvious structural damage may be noted in the text but any observations of this nature will be cursory. Further reports from a suitably qualified surveyor or structural engineer will be required.
- 1.3.4 Whilst every effort has been made to detect defects within the tree inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. Extreme climatic conditions can cause damage to even apparently healthy trees. All recommendations are given in the context of the site's current usage; any change will necessitate a re-inspection.

1.4 Site Visit

- 1.4.1 A site visit to carry out the BS 5837 survey was undertaken by James Plaskett on the 27th January 2022 to review the current condition of T1.

1.5 Site Description

- 1.5.1 T1 is located on existing scrub land to the south east of a container storage/parking area close to the entrance of Ballswood Quarry, off Gegin Lane.

1.6 Methodology

- 1.6.1 The following survey is based upon the findings of the visit and the conditions found on the day. This survey provides quantitative data relating to tree species, height, stem, diameter, height and direction of first significant branch, crown spread, age class and a brief qualitative assessment relating to tree condition and future potential.
- 1.6.2 With reference to BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations', an assessment of the tree resource has been undertaken following guidance in BS 5837:2012 and a calculation has been made for the theoretical Root Protection Area (RPA) as noted in the survey schedule in

metres.

1.6.3 The location of the tree surveyed is illustrated on the Tree Survey Plan which is included in Appendix 2 of this report.

1.6.4 Information recorded in the BS 5837 survey includes the following:

- **Sequential Survey Reference Number** – Recorded on the survey plan. Individual trees recorded have been given the prefix 'T' followed 1,2,3 etc.
- **Species** – The species identification is based on visual observations and the common English name is listed first, followed by the botanical name.
- **Tree Height** – This is estimated in metres.
- **Stem Diameter** – Measured by and recorded in millimetres to the nearest 10mm.
- **Crown Radius** – Recorded in metres along each cardinal point.
- **Life Stage** – Recorded as prescribed in BS 5837:2012 (e.g. Young (Y), Semi Mature (SM), Early Mature (EM), Mature (M), Over Mature (OM), Veteran (V)).
- **Condition** – Individual assessment of Crown, Stem & Basal area condition is made and an overall assessment of Physiological Condition (e.g. the presence of any decay and physical defect).
- **Life Expectancy** – estimated; and recorded as follows: Less than 10 years, 10-20 years, 20-40 years, more than 40 years.
- **Retention Category** – given as follows and corresponds with Table 1 of BS 5837:2012.

- A- **Trees of high quality and value**, including visual amenity value (sub categories 1,2,3). It is usual for such trees to be retained unless the planning merits of a particular scheme or layout over-ride.
- B- **Trees of moderate quality and value**, including visual amenity value (sub categories 1,2,3). Such trees should be considered for retention.
- C- **Trees of low quality and value**, including visual amenity value (sub categories 1,2,3).
- U- Trees 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.

Sub categories – trees in categories A to C will qualify under one or more of three sub categories (1,2,3). Sub categories 1, 2 & 3 are intended to reflect Arboricultural, Landscape Qualities, and Cultural Values respectively.

The tree survey schedule will list which sub category applies. It is intended that each sub category has equal weight such that, for example, an A1 tree has the same retention priority as an A2 tree. It is possible for a tree to qualify under more than one criterion.

- **Root Protection Area (RPA)** – This is calculated based on the average measure of the trees stem diameter in mm. In respect of all Category A, B and C trees which are proposed to be retained, the RPA has been calculated and is given in the Tree Survey Schedule, and would also be illustrated in the Tree Protection drawing. The figure given represents the radial distance, from the trees trunk, at which the barriers should be erected. The RPA is calculated in accordance with section 4.6 of BS 5837:2012.

For single stemmed trees, the RPA should be calculated as an area equivalent to a circle with the radius 12 times the stem diameter. For trees with more than one stem, one of the two calculation methods below should be used. The calculated RPA for each tree should be capped at 707m².

- (a) For trees with two to five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 + (\text{stem diameter 3})^2 + (\text{stem diameter 4})^2 + (\text{stem diameter 5})^2}$$

- (b) For trees with more than five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

The RPA for each tree will initially be plotted as a circle on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area will be produced. Modifications to the shape of the RPA will reflect a soundly based arboricultural assessment of likely root distribution.

Any deviation in the RPA from the original circular plot will take account of the following factors whilst still providing adequate protection for the root system:

- The morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
- Topography and drainage;
- The soil type and structure;

- d) The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

- 1.6.5 The tree was initially inspected from the ground using 'Visual Tree Assessment' techniques. Following this a Mobile Elevated Work Platform (MEWP)) was used to allow the surveyor access to visually inspect the middle and upper canopy of the tree.
- 1.6.6 The survey information has been recorded in a Tree Survey Schedule (included in Appendix 1 of this report), and the location of the tree is illustrated on the plan which accompanies this report (included in Appendix 2 of this report).

1.7 Observations and Comments

- 1.7.1 T1 is a mature Horse Chestnut tree located to the south east of an existing storage/parking area, close to the entrance to Ballswood Quarry off Gegin Lane.
- 1.7.2 It is a prominent tree, which appeared to be of fair vigour, but is considered to have reduced form due to the presence of notable defects.
- 1.7.3 The most significant of which was a large tear wound present at 9m height to the north east, which has resulted from a previous branch failure. In addition, there is a weak union caused by a tight (compression) fork between co-dominant stems at 3m height, with the presence of included bark.
- 1.7.4 Branch failures were noted elsewhere through the canopy, many of which are callusing slowly, but there was a minor decay pocket noted in relation to one at 13m high to the south west.
- 1.7.5 Other defects noted include a rubbing branch at 9m height to the south and numerous woodpecker cavities.
- 1.7.6 On balance, the overall the physiological condition of the tree has been assessed as being Fair, and the structural condition ranges from Good relating to the canopy, and Fair relating to the stem and base of the tree.

- 1.7.7 Despite the above, the individual prominence of this tree has led to it being assessed as a Category A tree.
- 1.7.8 Although it is considered to be a prominent tree, T1 did not exhibit key features attributed to a veteran tree, such as a large girth (beyond that expected for a mature tree with a low joining co-dominant stem), signs of crown retrenchment and hollowing of the stem. As such its age class has been assessed as being mature.
- 1.7.9 All details and recommendations relating to the tree surveyed is included in the Tree Survey Schedule, included in Appendix 1 of this report.

1.8 Legislation & Protection

Tree Preservation Orders:

- 1.8.1 Trees in the United Kingdom may be protected by a Tree Preservation Order (TPO).
- 1.8.2 Government guidance in relation to Tree Preservation Orders and trees in Conservation Areas states that: *“Tree Preservation Orders are made by the Local Planning Authority to protect specific trees, groups of trees or woodlands in the interests of amenity. An order prohibits the:*
- *cutting down;*
 - *topping;*
 - *lopping;*
 - *uprooting;*
 - *wilful damage; and*
 - *wilful destruction*
- of trees without the Local Planning Authorities written consent.” “In the Secretary of State’s view, cutting roots is also a prohibited activity and requires the authorities consent.”*
- 1.8.3 Prior to undertaking work on trees protected by a TPO, permission must be sought from the Local Planning Authority by submitting a standard application form.

Conservation Areas:

- 1.8.4 Trees in the United Kingdom may be protected if they are situated within a Conservation Area.
- 1.8.5 In order to undertake any work to trees present within Conservation Areas, it is a requirement to notify the Local Planning Authority of the work proposed using a Section 211 Notice. The Council must be notified 6 weeks before undertaking the work. The work may go ahead at the end of the 6 week period if the Local Planning Authority gives consent.
- 1.8.6 Note: trees within Conservation Areas which are already protected by a TPO are subject to the normal procedures and controls relating to the TPO.

Ancient Woodland and Trees

- 1.8.7 Guidance produced by Natural England and the Forestry Commission (known as 'standing advice'), relates to development proposals which may affect Ancient Woodland, Ancient Trees and Veteran Trees. Standing advice is a material planning consideration and should be taken into account when making decisions on planning applications.

Ancient Woodland

- 1.8.8 Government guidance defines **Ancient Woodland** as *"any area that's been wooded continuously since at least 1600 AD. It includes:*
- *Ancient semi natural woodland mainly made up of trees and shrubs native to the site, usually arising from natural regeneration*
 - *Plantations on ancient woodland sites – replanted with conifer or broadleaved trees that retain ancient woodland features, such as undisturbed soil, ground flora and fungi.*
 - *Wood pastures identified as ancient*
 - *Historic parkland, which is protected as a heritage asset in the NPPF."*

Ancient Trees

- 1.8.9 **Ancient Trees** are defined as individual trees or groups of trees within wood pastures, historic parkland, hedgerows, orchards, parks or other areas.

1.8.10 The Woodland Trust states that *“a tree is defined as ancient if it is:*

- *In the third or final stage of its life (this stage can go on for decades or centuries)*
- *Old relative to others of the same species*
- *Interesting biologically, aesthetically or culturally because of its great age.”*

Veteran Trees

1.8.11 The Woodland Trust states that all *“ancient trees are **Veteran Trees**, but not all veteran trees are old enough to be ancient.”* And that, *“Veteran trees are usually only in their second or mature stage of life.”*

1.8.12 Government guidance states that, *“a veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value.”*

1.8.13 *BS5837:2012 describes a veteran tree as a “tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. NOTE: These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.”*

Designations Relating to the Site:

1.8.14 It is understood that T1 is protected by a TPO.

1.8.15 The site is not located within a Conservation Area.

1.8.16 The Woodland Trust Ancient Tree Inventory records no individual ancient or veteran trees within or adjacent to the site.

1.9 Development Proposals

1.9.1 Proposals are for the extension of the existing quarry extraction area, within the permitted site boundary. The existing quarry infrastructure and access is to be retained as part of these proposals.

1.10 Arboricultural Impact Assessment

- 1.10.1 It is proposed that T1 will require removal as part of the development proposals.
- 1.10.2 Despite the prominence of T1 and its assessment as a Category A tree, its overall quality is considered to be compromised by its reduced form, and the presence of significant defects. Most notably, the large tear wound caused by branch failure at 9m height to the north east, and the weak union caused by a tight (compression) fork between co-dominant stems at 3m height, with the presence of included bark.
- 1.10.3 For these reasons, on balance the impact of its removal is considered to be Moderate.

Additional Requirements relating to Tree Works:

- 1.10.4 All works, including the tree felling work required to facilitate the development proposals outlined in this report, are to be undertaken in accordance with BS 3998:2010 by suitably qualified personnel, and in accordance with up to date and relevant health and safety legislation. Adequate Risk Assessments and Method Statements for working are to be produced in relation to all arboricultural operations.
- 1.10.5 Please note that all birds, nests, eggs and chicks are protected by the law. As such, all tree/scrub removal works are undertaken outside the bird nesting season (which runs from March to August).
- 1.10.6 Trees can provide important habitats for plants and wildlife which are protected under the Wildlife and Countryside Act 1981. Anyone proposing to undertake work on a tree which may be used as a roost site for bats, or by any other protected species, should first consult Natural England, tel. 0300 060 3900, email: enquiries@natural-england.org.uk
- 1.10.7 Overhead lines present within close proximity to trees requiring work, or to be felled, are to be identified and appropriate measures taken to ensure safe working near to these lines, including the production of risk assessments and method statements. Please note, the locations/status of overhead lines have not been included as part of this survey. Any references to such lines within the report

should be regarded as cursory.

- 1.10.8 In any calendar quarter you may fell up to 5 cubic metres on your property without the need to obtain a felling licence, as long as no more than 2 cubic metres are sold. It is an offence to fell trees without a licence where one is required. A felling licence can be obtained from the Forestry Commission. Please note that certain types of felling do not need permission, please see the Forestry Act 1967 for the list of exemptions.
- 1.10.9 Because the tree is protected by a TPO, permission will need to be sought from Wrexham County Borough Council before the tree can be felled.

APPENDIX 1

Tree Survey Schedule:

- BS 5837:2012 Tree Survey Schedule

BS5837:2012 Tree Survey

access2trees ltd

Client: KEDD Ltd
 Project: Ballswood Quarry, Wrexham
 Survey Date: 27/01/2022
 Surveyor: James Plaskett

access2trees

Corbet Lodge
 Moreton Corbet
 Shrewsbury
 Shropshire
 SY4 4DW
 Phone: 01939 252 818

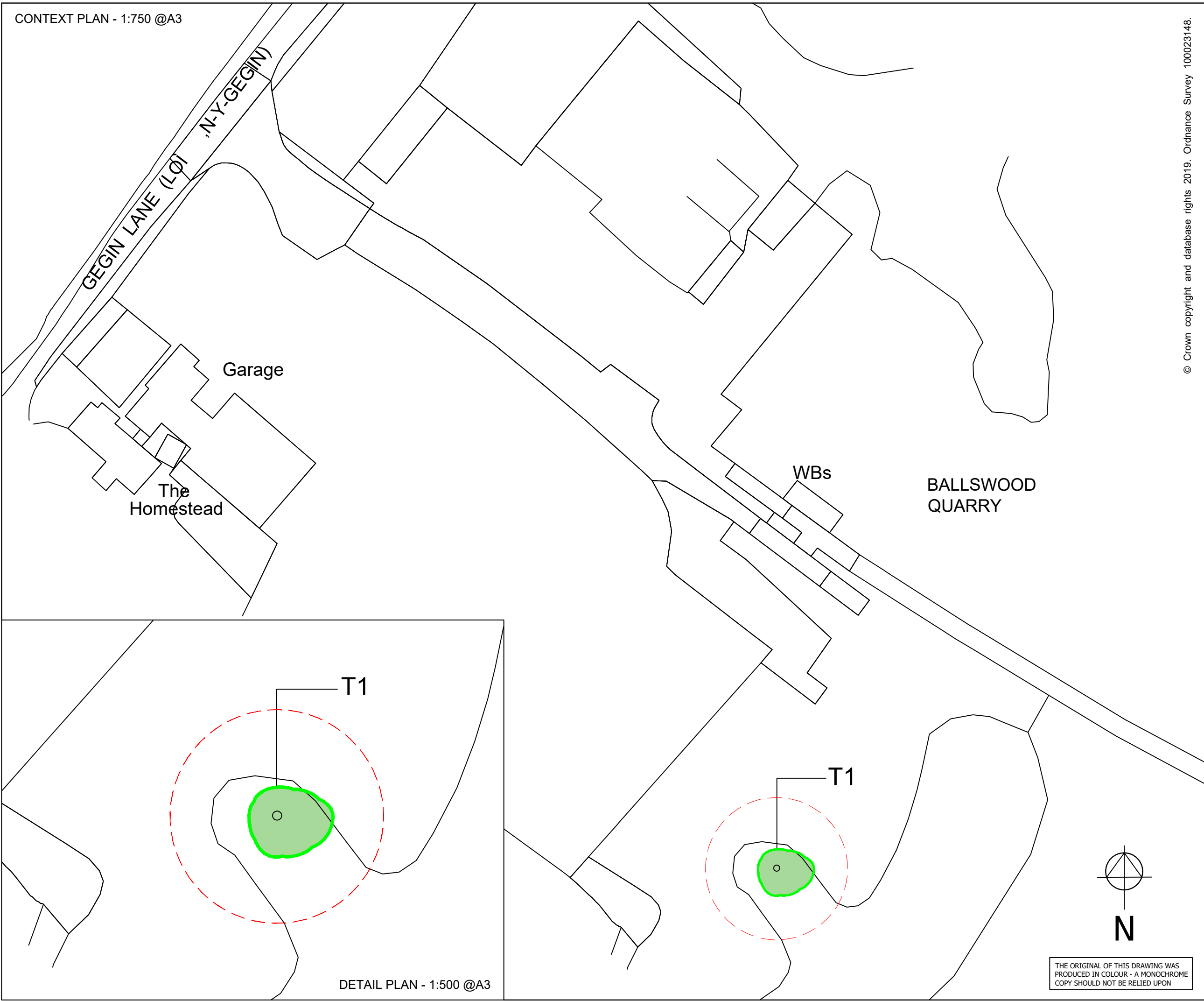
Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T1													
Common Horse Chestnut		23	1	1320	N	4	2	M	A: 707	Fair	C: Good		A.1
Aesculus hippocastanum					E	8	2		R: 15		S: Fair	The tree is located in an area used as a storage yard, surrounded by aggregate hardstanding. There is a road located approx. 9m to the north west. The ground around the base of the tree has been excavated over the years, as such the base of the tree is raised above the immediate surrounding ground levels by approx. 400mm. The tree has experienced buttress root damage in the past. There has been significant branch failure with presence of a large tear wound at 9m height to the north east (the wound is approx. 1200mm long & 400mm wide - depth approx. 320mm, which equates to approx. 50% of main stem leader). The presence of brown rot here is likely to be caused by the presence of a tight union and the resulting included bark, which has brought about the failure of the limb. There is included bark present at 3m height to the south, to a tight (compression) fork between co-dominant stems. Woodpecker cavities present (approx. 5 No.). Rubbing branch at 9m height to the south. Signs of previous branch failure - these are slowly callusing but there are minor decay pockets present at 13m high to the south west. The tree is leaning to the east by approx. 5 degrees.	10 to 20 yrs
				S	6	1				B: Fair			
				W	4	2							
Age Classifications:		N	Newly planted	EM	Early Mature	Condition:		C	Crown	Stems:		Ø	Diameter
		Y	Young	M	Mature			S	Stem			(Eq)	Equivalent stem diameter using BS5837:2012 definition
		SM	Semi-mature	OM	Over Mature			B	Basal area	ERC:		Estimated Remaining Contributio	

APPENDIX 2

Survey Drawing:

- Tree Survey Plan

CONTEXT PLAN - 1:750 @A3



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- Legend:
-  Category A Tree
 -  Category B Tree
 -  Category C Tree
 -  Category U Tree
 -  Root Protection Area (RPA)

PROJECT REF:
**BALLSWOOD QUARRY
WREXHAM**

TITLE:
TREE SURVEY PLAN

CLIENT:
KEDD Ltd

DATE:
January 2022

DWG REF:
TS116-001

SCALE:
1:750@A3

access2trees

— [ARBORICULTURE] —

01939 252 818 enquiries@access2trees.co.uk

THE ORIGINAL OF THIS DRAWING WAS
PRODUCED IN COLOUR - A MONOCHROME
COPY SHOULD NOT BE RELIED UPON

DETAIL PLAN - 1:500 @A3

APPENDIX 3

Site Photographs



View of T1, looking east



View of T1, looking east



View of T1, looking north

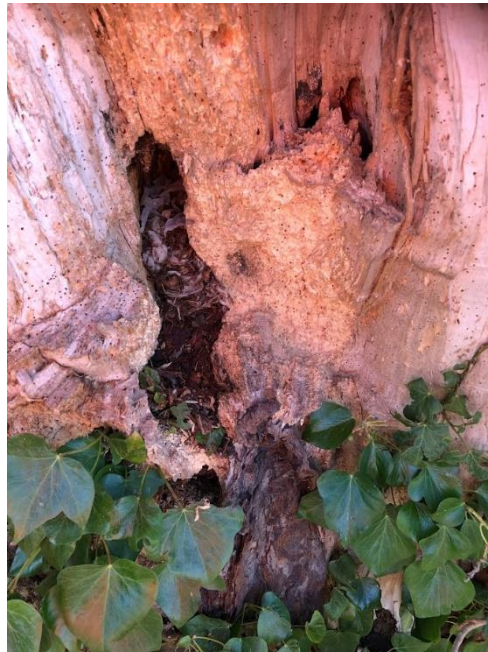


View of T1, looking east

View of T1, looking north west



View of T1, looking west



View of T1, looking west



View of T1, looking west



View of T1, looking north west



View of T1, looking north west



View of T1, looking north east



View of T1, looking east



View of T1, looking north

APPENDIX 4

British Standard Trees in Relation to Construction – Recommendations BS 5837:2012
Cascade chart for Tree Quality Tree Assessment

TREES FOR REMOVAL				
Category and Definition		Criteria		
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 U Category trees (i.e. 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) e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality.		
TREES TO BE CONSIDERED FOR RETENTION				
Category & Definition	1. Mainly arboricultural values	2. Mainly Landscape values	3. Cultural Values	
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 essential components of groups, or of 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-pastures)	
Category B Those 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 <u>category A designation</u>	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 area	Trees with clearly identifiable conservation or other cultural benefits	
Category C Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in the higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with no material conservation or other cultural value	

End of report