Vrynwyn Reserve, Area A – BS 5837: 2012 Arboricultural Report and Impact Assessment

Canal and river trust

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Executive Summary

On behalf of Canal & River Trust (the Client), Cura Terrae Land and Nature Limited (CTLN) has carried out a tree survey to BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* in November 2023 at Vyrnwy (Vyrnwy site – Area A). This survey has formed the basis for an assessment of the impacts that development proposals may have on the existing tree cover and recommends methodologies that will need to be adopted to protect retained trees during development.

The survey recorded all significant trees within the site and those which may be affected by any development proposed within the site boundary, recording a number of parameters including species, crown spread and Root Protection Area (RPA).

The RPA of any given tree is calculated in accordance with BS 5837:2012 and is generally a circular plot centred on its stem. This area around each tree should not be disturbed by excavation, compaction, contamination or other related demolition and construction activities. Minor encroachment into the RPA may be possible if specific methodologies are put in place that reduce the likelihood of the tree being negatively impacted.

The survey recorded thirty four individual trees and eighteen tree groups, six hedges. The surveyed trees were mostly native, lapsed field boundary hedgerows of a mixed quality but also included some young planting along the eastern boundary and offsite, mature oak trees and mixed species planting to the south, bordering the Montgomery Canal.

Access to Powys Council Planning Authority interactive spatial map has informed us that no trees within the site boundary are protected by a Tree Preservation Order (TPO) and the site is not located within a Conservation Area.

An online search using the Multi Agency Geographical Information for the Countryside (MAGIC) website for statutory conservation sites was undertaken (where appropriate) to determine the presence of Ancient Woodland within 15.0 m of the site boundary.

The Client proposes construction of landscaping bunds on land between the Montgomery Canal and the River Vyrnwy as part of the wider canal restoration scheme. This will require the removal of seven trees and one tree group, but may have an impact on the roots, stems and canopies of retained trees unless suitable protection measures are put in place.

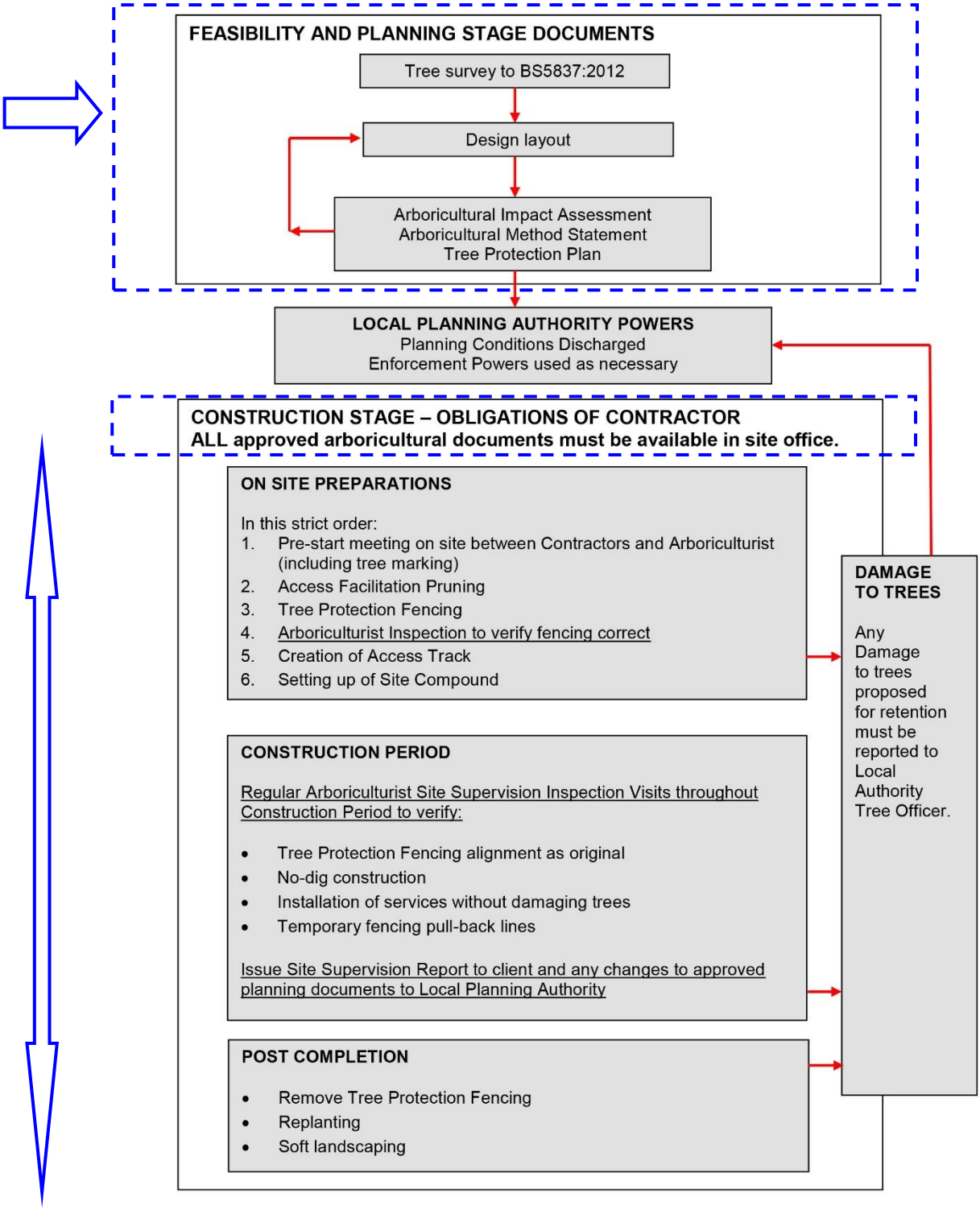
This report details the potential arboricultural impacts of development at the site and offers a range of protection measures and construction methodologies which should be adopted. These measures aim to prevent accidental damage and other adverse effects on the health of retained trees.

The report also makes recommendations for any measures to mitigate or compensate for the loss of trees within the site and the likely impact on the site and the wider local landscape.

1. Introduction

1.1 Context of this Report in the Planning System

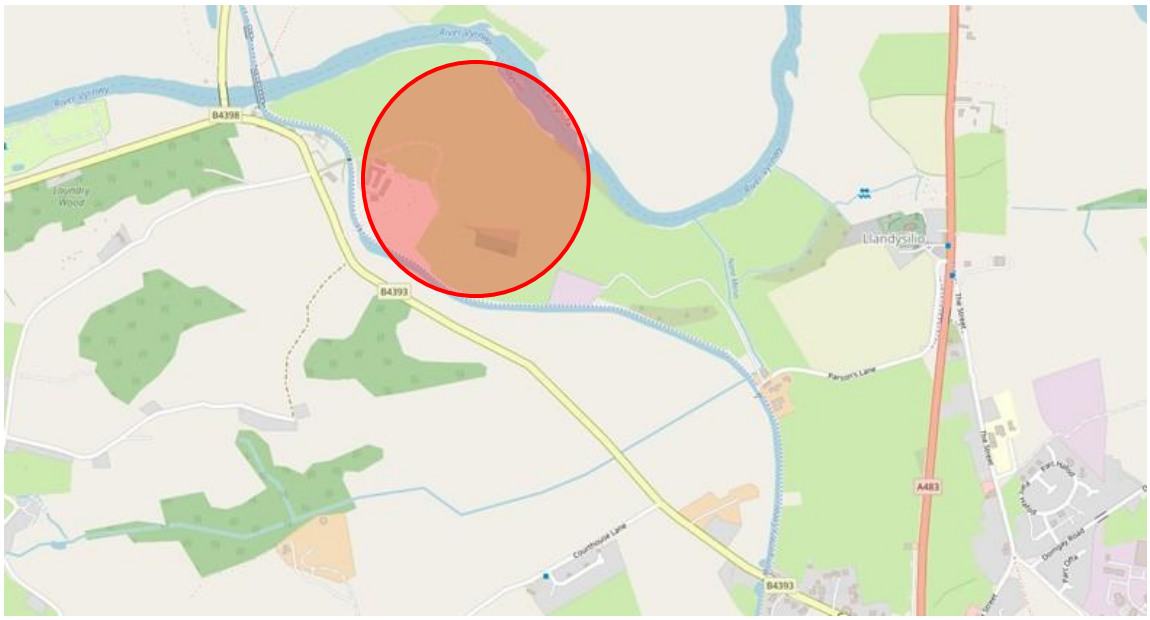
Figure 1: The Design and Construction Process and Tree Care



1.2 Location

1.2.1 Cura Terrae Land and Nature Limited has been commissioned by the Client to undertake a tree survey of the site at Vyrnwy Reserve, on land between the Montgomery Canal and the River Vyrnwy, SY22 6PG, Ordnance Survey UK Grid Reference SJ 25835 19272, and prepare the findings in a report. The site location is shown in Figure 2.

Figure 2: Location Map



© OpenStreetMap contributors

1.3 Tree Designations

1.3.1 The information available on the Powys Council website has confirmed that the site is not located within a conservation area and no trees included in the survey are protected by a TPO - (https://en.powys.gov.uk/treepreservationorders).

1.3.2 The permission of the local planning authority must be sought before any works are carried out to protected trees. Potentially unlimited fines can be imposed for illegally carrying out any works to protected trees.

1.3.3 Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website indicates that no ancient woodland is present within a 15.0 m buffer of the site.

1.4 Protected Species

Bats

1.4.1 Mature trees can often contain cavities or hollows which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) are protected under *The Conservation of Habitats and Species Regulations* 2017 (Habitats Regulations 2017). They also receive legal protection under the *Wildlife and Countryside Act* (WCA) 1981. Consequently, causing damage to a bat roost constitutes an offence.

1.4.2 Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

Birds

1.4.3 Trees and hedgerows can provide habitat for nesting birds which are protected under the *Wildlife and Countryside Act* (WCA) 1981. Some species are further protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

1.4.4 As the trees at the site provide potential habitat for nesting birds all tree work should ideally be completed outside the peak nesting bird season (Generally March to August inclusive).

1.4.5 If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have fully fledged.

2. Tree Survey Methodology

2.1 Site survey

2.1.1 Cura Terrae have undertaken the tree survey in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*, to provide detailed and independent arboricultural advice in the context of potential development. The survey was a ground based visual inspection carried out by a suitably qualified arboriculturist. No trees were tagged as part of the survey.

2.1.2 The tree inspection was carried out in November 2023 by Andy O'Brien, Arboricultural Consultant, when the deciduous trees were generally not in leaf. The weather on the day of the survey was wet and overcast. This allowed for a thorough inspection of all trees included in the survey.

2.1.3 An additional survey was carried out in March 2025 by Liam Evans, Arboricultural Consultant, when the deciduous trees were in partial leaf. The weather on the day was mild and sunny. This allowed for a thorough inspection of all trees included in the survey.

2.1.4 The survey recorded all trees with a stem diameter of 75 mm or more at a height of 1.5 m above ground level within the site boundary. Any significant trees outside the boundary which could be significantly affected by the future development of the site were also recorded.

2.1.5 The following characteristics were recorded:

- Species
- Stem diameter at 1.5 m above ground level (mm)
- Estimated height (m)
- Approximate crown spread (m) in North, East, South and West directions
- Estimate of the number of years that the tree is likely to remain suitable for retention
- Age class
- Condition category in accordance with BS 5837:2012. The categories are defined as:
    - 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
    - Category A = Trees of high quality with an estimated remaining life expectancy of at least 40 years
    - Category B = Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
    - 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
- Value subcategories where appropriate in accordance with BS 5837:2012. These are defined as:
    - 1 = Mainly arboricultural qualities
    - 2 = Mainly landscape qualities
    - 3 = Mainly cultural values, including conservation
- General notes about physiological and structural condition and any management recommendations

2.1.6 All survey data has been based on a topographical survey where possible, supplied by the client. Where topographical information has not identified tree positions or Ordnance Survey mapping has been utilised, trees and hedgerows have been positioned using GPS and aerial photography to provide approximate locations in relation to existing surrounding features. Further confirmation of tree locations through a topographical survey of the site is recommended to ensure future design accuracy.

2.1.7 Some measurements for trees with limited accessibility may have been estimated. This is highlighted with a hash (#) symbol in the Tree Survey Schedule at Appendix 1.

2.1.8 Where trees formed a contiguous canopy, they may have been grouped, in line with the guidance of BS 5837:2012. If densely wooded areas are not expected to be directly affected by development proposals only the significant trees at the woodland perimeter will have been surveyed.

2.1.9 Trees are living organisms that change over time. A re-survey of all trees should be carried out if there have been any significant storm events or more than 12 months have passed since the survey was carried out.

2.2 Calculation of Root Protection Area (RPA)

2.2.1 The Root Protection Area (RPA) is calculated according to the formulae set out in BS 5837:2012. This is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority.

2.2.2 Due to the specific topography of the site and the presence of surrounding structures the RPA is likely to be a simplified representation of the actual morphology and disposition of tree roots. Any deviation in the shape of the RPA from the calculated circular shape will largely be based on conjecture and so should generally be avoided. However, where significant site features are present that could clearly influence the disposition of tree root growth (e.g. water courses, building foundations and retaining walls), the RPA may be amended to take these features into account.

3. Tree Survey Results

3.1 General Site Description

3.1.1 The site is an agricultural field, located approximately 1 km to the northwest of the town Four Crosses, and 2 km to the south of Llanymynech, to the southwest of the England/Wales border.

3.1.2 The site has an access track that runs from the neighbouring farm to North West, South of H001 and North T050, T049 and H048 to the barn which is located on the south eastern boundary.

3.1.3 The trees at the site were located predominantly along the field boundaries except for T038 and T039 which is located more central within the site.

3.1.4 Offa's Dyke Path is located immediately to the south of the site and follows the course of the Montgomery Canal. The River Vyrnwy runs approximately west to east, approximately 100 metres to the north of the site.

3.2 Results of Tree Survey

3.2.1 The Tree Survey Schedule at Appendix 1 details the results of the tree survey and includes any management recommendations. The schedule should be read in conjunction with the tree plans at Appendix 3 which show the location of each tree and group surveyed and the extent of their canopies and RPA.

3.2.2 Thirty-four individual trees, eighteen tree groups and 6 hedges, have been recorded during the survey. The additional survey collected data on T051 – T058. The summary of the tree survey findings is shown in Table 1.

Table 1: Summary of Tree Survey Findings

Category A	Category B	Category C	Category U
Trees: 6 Groups: 0	Trees: 7 Groups: 3	Trees: 15 Groups: 15 Hedges: 6	Trees: 6 Groups: 0

3.2.3 The most significant tree was the mature Pedunculate Oak, T014 and T056 T014 is visually prominent and is exhibiting veteran characteristics.

3.2.4 T029, T041 and T044 have been given a category A.

3.2.5 Significant vegetation was also present to the north, south and west and consisted mainly of mature hawthorn with occasional oak trees within a network of field boundary hedgerows.

3.2.6 There was evidence of some compacted ground and soil erosion along the track in between G047 and T038 by the use of agricultural vehicles.

3.2.7 T056 is a high-quality specimen Pedunculate Oak with large diameter stem over 1000mm with no signs of dysfunctional wood or signs of decay. It has a large canopy spread and is a prominent feature on the landscape whilst providing high quality habitat for the local environment. This tree has the capability to have life expectancy that could exceed 40 years. The tree has had 3 bat boxes attached to the main stem, it was unclear if the bat boxes were in use. However, this tree is showing

good habitat potential including potentially protected species as per section 1.4 and an ecological survey is recommended.

3.2.8 T055 is another high-quality specimen though slightly small than its neighbour T056. The tree displays some good features and been given a category A

3.3 Ash Die Back (*Hymenoscyphus fraxineus*)

3.3.1 Ash Die Back (ADB) also known as Chalara or Chalara Dieback of Ash, is a disease of ash trees caused by a fungus called *Hymenoscyphus fraxineus*. ADB causes leaf loss, crown dieback and bark lesions in affected trees. Once a tree is infected the disease is usually fatal, either directly or indirectly by weakening the tree to the point where it succumbs more readily to attacks by other pests or pathogens.

3.3.2 It is difficult to assign ash trees a retention category using the BS5837:2012 standards because of ADB. The general advice from public bodies is to retain ash trees and see how the disease develops within the local population. However, if clear signs of ADB are found on sites, it is highly likely that all the ash trees on that site will succumb in time. It could therefore be unreasonable to consider an ash tree a significant constraint to development.

3.3.3 The Tree Council has produced a document giving guidance to tree owners and managers on how to deal with ADB. *Ash dieback: an Action Plan Toolkit* (Summer 2019)[1]. This gives guidance on assessing the danger posed by trees infected with ADB. Cura Terrae have adopted the Suffolk County Council Ash Health Assessment System (Appendix 4). The system categorises ash trees with ADB symptoms into 4 classes:

- Ash Health Class (AHC) 1 – 100% - 75% Live Canopy (Vitality Class 0)
- Ash Health Class (AHC) 2 – 75% - 50% Live Canopy (Vitality Class 1)
- Ash Health Class (AHC) 3 – 50% - 25% Live Canopy (Vitality Class 2)
- Ash Health Class (AHC) 4 – 25% - 0% Live Canopy (Vitality Class 3)

3.3.4 Many local authorities have concluded that any trees which fall within AHC 3 and 4 require management and it seems reasonable to follow a similar system. The priority of that management depends on the severity of the tree's condition, with trees declining from AHC 2 into AHC 3 requiring work as part of a program of regular works. As the trees decline towards AHC 4, action becomes more urgent to abate any hazard, assuming the tree is in a high risk area.

[1] https://treecouncil.org.uk/wp-content/uploads/2019/11/Tree-Council-Ash-Dieback-Toolkit-2.0.pdf

4. Arboricultural Impact Assessment (AIA)

4.1 Introduction

4.1.1 A BS 5837:2012 Arboricultural Impact Assessment (AIA) has been carried out for all trees included in the survey. The AIA methodology evaluates the potential direct and indirect impacts the proposed development could have on the trees at the site. Where necessary mitigation measures are recommended.

4.1.2 BS 5837:2012 paragraph 5.4.2 states:

> *"The assessment should take account of the effects of any tree loss required to implement the design, and any potentially damaging activities proposed in the vicinity of retained trees. Such activities might include the removal of existing structures and hard surfacing, the installation of new hard surfacing, the installation of services, and the location and dimensions of all proposed excavations or changes in ground level, including any that might arise from the implementation of the recommended mitigation measures. In addition to the impact of the permanent works, account should be taken of the buildability of the scheme in terms of access, adequate working space and provision for the storage of materials, including topsoil."*

4.2 Development Proposals

4.2.1 The Client proposes the construction of landscaping bunds in two fields to the south of the proposed Vyrnwy reserve, between the Montgomery Canal and the River Vyrnwy, as part of a wider canal restoration scheme. The fields are referred to as areas A and B, this report deals with Area A, owned by Powys County Council. The project will require the removal of trees, but may have an impact on the roots, stems and canopies of retained trees unless suitable protection measures are put in place.

4.2.2 This AIA is based on the development layout provided by the Client (ref: Arcadis Vyrnwy Reserve Soil Reuse 10048826 dated October 2024). And the updated drawing file: "RPA map with updated design" received March 2025

4.3 Tree Retention and Removal

4.3.1 The development proposals indicate that several trees or groups will need to be removed and the retention and protection of all trees within the site boundary is likely to be suitable throughout the development.

4.3.2 Table 2: Summary of Required Tree Removals

Trees to be Removed			**Trees to be Retained**		
Category A	**Category B**	**Category C**	**Category A**	**Category B**	**Category C**
Trees: 2	Trees: 1	Trees: 4	Trees: 4	Trees: 6	Trees: 11
Groups: 0	Groups: 0	Groups: 1	Groups: 0	Groups: 3	Groups: 14
Hedgerows: 0	Hedgerows: 0	Hedgerows: 0	Hedgerows: 0	Hedgerows: 0	Hedgerows: 6
Total: 2	**Total: 1**	**Total: 5**	**Total: 4**	**Total: 9**	**Total: 31**

4.3.3 G046 is being consider as a suitable group to be hedge layed on the top of the embankment that lies to the south of the group. As part of the process of hedge laying, some young trees will be removed but would be impossible to account for how many trees will be retained or removed. It may be suitable for retention however, given the proposed design layout this has been noted as removed.

4.3.4 The tree loss can be offset by the habitat creation of introducing a layed hedge into the landscape and look to replace the removed trees. The planting of diverse tree species that are in keeping with the surrounding landscape character and tolerant of climate change can mitigate for the required removals and, in the longer term, increase the amenity value and ecosystem service benefits that the site's trees provide.

4.3.5 The development proposes the loss of two category A trees. T056 is worthy of note and consideration of the impact the design proposal will have on T056 and T055 should be reviewed, taking into consideration all alternative engineering solutions to accommodate their objective and to avoid the loss of both trees as they carry such a high Arboricultural value due to there age, species and characteristics. Both T055 and T056 have a long life expectancy, contributing to the local environment and ecosystem for years to come.

4.4 Impacts from Construction Operations

4.4.1 Where proposed operations encroach beneath the canopy or into the RPA of retained trees there is the potential for damage to occur.

4.4.2 All works within the RPA of retained trees have been detailed as part of the Arboricultural Method Statement at Appendix 3, to ensure that these works are carried out in a manner that eliminates the likelihood of any damage occurring.

4.5 Mitigation and Protection

4.5.1 The retained trees will need protecting from development operations to ensure that they are not negatively impacted during the development. This has been detailed as part of the Arboricultural Method Statement (AMS) at Appendix 3.

4.5.2 Any works that are proposed within the RPA of retained trees must be carried out as specified in the AMS. It is likely that these works will need to be supervised by the project arboriculturist so that any tree related issues that occur can be suitably dealt with.

4.5.3 To compensate for potential root damage and stress caused by construction activities, retained trees onsite should be mulched. The materials that may be used include wood chip, pulverized bark, or leaf mould. The mulched area should extend throughout the open ground within the RPA. The depth of an organic mulch should not be so much as to inhibit aeration of the root system or to cause overheating (Approximately 50 mm to 100 mm).

5. References

BS 3998:2010 *Tree work – Recommendations*. ISBN 978 0 580 53777 6

BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. ISBN 978 0 580 69917 7

BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations.* ISBN 978 0 580 713170

Littlefair P. (2011). *Site layout planning for daylight and sunlight: a guide to good practice (BR 209).* ISBN 978 1 84806 178 1.

Volume 4 National Joint Utilities Group (NJUG) *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*, Volume 4: Issue 2: 16/11/2007, www.njug.org.uk

Appendix 1: Tree Survey Schedule

Table 3: Tree Survey Schedule

Key:	Symbols Used	Age Class	SLE	Comments	Management	Category
	< = less than ~ = approximately > = greater than # = estimated	Young, Semi mature, Early mature, Mature or Over mature	Estimate of Safe Life Expectancy (<10 Years, 10+ Years, 20+ Years or 40+ Years)	AGL - Above Ground Level MS - Multi-Stemmed TD - Trunk Division (height in m) DED - Dutch Elm Disease ADB - Ash Die Back AHC (1, 2, 3 or 4) - Ash Health Class	*Tree works that are recommended regardless of future development are in Italics* **Tree works that are required to facilitate the proposed development are in Bold**	**BS 5837:2012 Retention Categories:** U - Unsuitable for retention A - High B - Moderate C - Low **Sub-categories:** 1 - Mainly arboricultural qualities 2 - Mainly landscape qualities 3 - mainly cultural value

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
H001#	Hawthorn *(Crataegus sp.)*	1.5	1	80#	See plan				0	Mature	20+ Years	Fair	Well maintained boundary hedge. Approx 1m in width. Bramble understorey at hedge base along its length. Densest at eastern edge.	–	C2	–	–
T002	Field Maple *(Acer campestre)*	9	1	700	5	4.5	4.5	4.5	1	Over Mature	20+ Years	Fair	Off site. Start of linear field boundary. Provides excellent visual amenity. Dense ivy in main crown structure. Exposed buttress roots to the east. Evidence of animal damage to main stem west.	–	B1,2	8.4	222
T003	Hawthorn *(Crataegus sp.)*	7	3	90,80,100	1	1	1	1	0.5	Semi Mature	20+ Years	Fair	Unmanaged stems. Ivy growth within crown. Offsite willow stems emanate toward tree.	–	C2	1.9	11
G004#	Ash x2 *(Fraxinus excelsior)*	16	2	400	See plan				1	Early Mature	<10 years	Fair	Historic maintainence as coppice. Basal cavity in north stem. Major deadwood.	–	C2	–	–
T005	Goat Willow *(Salix caprea)*	15.5	1	800	9	10	8	10	0.5	Mature	10+ Years	Fair	Historic maintainence as coppice. North limb resting in adjacent tree. Provides good visual amenity.	–	C2	9.6	290
T006	Hazel *(Corylus avellana)*	7	10	250	3.5	5	3	6	0	Mature	10+ Years	Fair	Historic management. Unmanaged multistemmed coppice. Selfset holly growth at stem base.	–	C2	9.5	284
G007#	Mixed Species x4 *(Mixed Species)*	7	4	150 avg	See plan				0.5	Early Mature	10+ Years	Poor	Unmanaged hazel and goat willow coppice stools.	–	C2	–	–

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T008	Sycamore *(Acer pseudoplatanus)*	13	2	200,400	2.5	6.5	5	6	1.5	Early Mature	20+ Years	Fair	Co dominant stems at gl. Ivy growth throughout central crown.	–	C2	5.4	92
G009#	Mixed Species x10 *(Mixed Species)*	4	10	90 avg	See plan				0.5	Early Mature	10+ Years	Fair	Hawthorn, hazel. Unmanaged hedgerow coppice. 4m stem spacings between stools.	–	C2	–	–
G010#	Mixed Species x10 *(Mixed Species)*	12	10	150 avg	See plan				1	Mature	20+ Years	Fair	Hedgerow group provides good visual amenity. Dense ivy growth throughout stems and crowns with 2m stem spacings.	–	C2	–	–
T011	Sycamore *(Acer pseudoplatanus)*	13	1	600	0	0	0	0	0	Dead	Dead	Poor	Large standing dead snag. Providing excellent habitat value. Dense ivy on main stem.	–	C1	7.2	163
G012#	Mixed Species x10 *(Mixed Species)*	5	10	200 avg	See plan				0	Semi Mature	10+ Years	Fair	Ash, hawthorn and coppiced hazel. 4m stem spacings.	–	C2	–	–
G013#	Mixed Species x10 *(Mixed Species)*	24	10	600 avg	See plan				1	Mature	10+ Years	Fair	Large willow and alder stems located at edge of river bank, stem bases currently partly submerged by river. Willow have history of large limb failure. Providing good amenity value and screening. 3m stem spacings.	–	C2	–	–
T014	Pedunculate Oak *(Quercus robur)*	15	1	1500	6	8	6	6	2	Veteran	40+ Years	Fair	Veteran features. Limb cavities, large deadwood. Retrencing crown. Multistemmed elder growing at stem base north.	–	A1,2	15	707
G015#	Crack Willow x10 *(Salix fragilis)*	13	10	600 avg	See plan				0.5	Mature	10+ Years	Poor	Unmanaged linear group located on edge of river bank. Some stems partially submerged. History of large limb and stem failure to the north. Crown structures predominantly to the north over river.	–	C2	–	–
T016	Crack Willow *(Salix fragilis)*	10	1	400	4	2	2	4	2	Early Mature	10+ Years	Fair	Co dominat stems at 1.2m agl. Stem base at waters edge.	–	C2	4.8	72
T017	Crack Willow *(Salix fragilis)*	20	3	800	10	12	9.5	9	0	Mature	10+ Years	Poor	Mutlistemmed at gl. Large basal cavities. History of major stem failure to the east and upper crown.	–	C2	15	707

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G018#	Crack Willow x5 *(Salix fragilis)*	17	5	800 avg	See plan				1	Mature	10+ Years	Poor	Linear group submerged below water level. 5m stem spacings. History of large limb and branch failure. Associated regrowth and deadwood throughout. FFB Ganoderma australe present on numerous stems.	–	C2	–	–
G019#	Crack Willow *(Salix fragilis)*	6	1	80 avg	See plan				0	Young	20+ Years	Fair	Coppice stools submerged underwater. History of management.	–	C2	–	–
G020#	Crack Willow *(Salix fragilis)*	17	1	500 avg	See plan				0	Early Mature	20+ Years	Fair	Multistems below water level with 3 - 5 m stem spacings.	–	C2	–	–
G021#	Mixed Species *(Mixed Species)*	6	1	80 avg	See plan				0	Young	40+ Years	Fair	Goat willow, crack willow coppice stools below water line with 2m spacings. Bramble understorey borders group to the south.	–	C2	–	–
T022#	European Lime *(Tilia x europaea)*	2	1	80	0.5	0.5	0.5	0.5	0	Dead	<10 years	Poor	Co dominant stems failed and resting on the ground. Small epicormic shoots emanate from the remainder of the failed stems.	Though catorgorised as 'unsuitable to retain', tree should remain as standing deadwood, an important feature in the landscapefor habitiat value. The change of land use will have almost no footfall or vehicle access therefore the risk falls within broadly acceptable tollerance of risk	U	0	0
T023#	European Lime *(Tilia x europaea)*	3	1	1100	0	0	0	0	0	Dead	<10 years	Poor	Main stem has historically failed and is resting on the ground. Small epicormic shoots emanate from the remainder of the stump.	Though catorgorised as 'unsuitable to retain', tree should remain as standing deadwood, an important feature in the landscapefor habitiat value. The change of land use will have almost no footfall or vehicle access therefore the risk falls within broadly acceptable tollerance of risk	U	0	0

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T024	European Lime *(Tilia x europaea)*	19	1	800	8.5	7	8	7	1	Mature	40+ Years	Good	Large areas of standing water around stem base North. Very dense phytoplasmas growth throughout central crown. Minor deadwood.	–	B1,2	9.6	290
G025 #	Mixed Species *(Mixed Species)*	15	1	500 avg	See plan				1	Mature	20+ Years	Fair	Large group of approximately 20 trees. Located on river bank .Goat willow, Alder Ash. Recent high water levels have water logged the ground and the majority of the stems are under water.	–	C2	–	–
H026 #	Common Hawthorn *(Crataegus monogyna)*	1	1	80 avg	See plan				0	Mature	20+ Years	Fair	Small section of boundary hedge approximatley 5 metres in length and 1.5m I'm height and 1m wide.	–	C2	–	–
T027 #	Common Hawthorn *(Crataegus monogyna)*	8	2	300,350	6	6	7	7	2	Mature	20+ Years	Fair	Ground surrounding stem base waterlogged. Main stem encroaching into boundary fence and barbed wire. Minor deadwood.	–	B2	5.5	95
H028 #	Common Hawthorn *(Crataegus monogyna)*	1	1	80 avg	See plan				0	Mature	20+ Years	Fair	Well maintained boundary hedge. Gaps appear sporadically along its length. 3 unmanaged stems appear half way along length to a height of 5m. Large amount of standing water surrounding stems. Approx 1m wide maximum.	–	C2	–	–
T029	London Plane *(Platanus x hispanica)*	26	1	1300	12	16	10	10	4	Mature	40+ Years	Good	Multistemmed at 3m agl. History of crown raising/ lower branch management. Previous pruning wounds partially occluded. Large diameter deadwood. Woodpecker hole on branch stub south at 6m agl. Crown structure has some weak unions.	–	A1,2	15	707

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T030	European Lime *(Tilia x europaea)*	20	1	800	8	7	10	10	1.5	Mature	<10 years	Poor	Large area of standing water 3m to the North of the main stem. Major dieback throughout tree crown. Major deadwood.	Though catorgorised as 'unsuitable to retain', tree should remain as standing deadwood, an important feature in the landscapefor habitiat value. The change of land use will have almost no footfall or vehicle access therefore the risk falls within broadly acceptable tollerance of risk	U	0	0
H031 #	Common Hawthorn *(Crataegus monogyna)*	5	1	110 avg	See plan				0	Mature	20+ Years	Fair	Unmanaged boundary hedge with multistems emanating throughout.	–	C2	–	–
H032 #	Common Hawthorn *(Crataegus monogyna)*	1	1	80 avg	See plan				0	Mature	20+ Years	Fair	Well maintained boundary hedge not continuous. Approx 1m wide.	–	C2	–	–
T033	Elder *(Sambucus nigra)*	4	3	90,80,90	2	2	2	2	0.5	Early Mature	20+ Years	Fair	Low amenity value.	–	C2	1.8	10
T034	Horse Chestnut *(Aesculus hippocastanum)*	19	1	85	8	10	12	5.5	1	Mature	<10 years	Poor	Co dominant stems at 1.8m agl. Canker stains North agl. Large deadwood throughout. Low bud density and poor crown structure. Large area of standing water the south. Tree is in decline.	Though catorgorised as 'unsuitable to retain', tree should remain as standing deadwood, an important feature in the landscapefor habitiat value. The change of land use will have almost no footfall or vehicle access therefore the risk falls within broadly acceptable tollerance of risk	U	0	0
G035#	Goat Willow *(Salix caprea)*	3	1	80	See plan				1	Semi Mature	20+ Years	Fair	Coppice stools with 5 m spacings. Stem bases submerged under water.	–	C2	–	–

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G036#	Mixed Woodland *(Mixed Woodland)*	22	1	600 avg	See plan				1.5	Mature	40+ Years	Good	Woodland block consisting of Poplar, Ash, Larch, Oak,Holly. Ground to north heavily water logged. 6m stem spacings. Provides good visual screening.	–	B2	–	–
T037 #	Goat Willow *(Salix caprea)*	7	5	180 avg	5	2	1	2	0	Semi Mature	10+ Years	Fair	Stems lean North away from woodland. Heavily waterlogged ground.	–	C2	4.8	72
T038	Pedunculate Oak *(Quercus robur)*	22	1	850	8	9.5	13	12	2	Early Mature	40+ Years	Good	History of lower branch removal to North at 1.8m agl. Minor deadwood. Exposed surface rooting.	–	B2	10.2	327
T039	Pedunculate Oak *(Quercus robur)*	22	1	700	6.5	6	6.5	6	2	Early Mature	40+ Years	Good	Co dominant stems at 2,5m agl. Minor deadwood. Exposed surface rooting.	–	B2	8.4	222
T040	Pedunculate Oak *(Quercus robur)*	15	1	1010	7.5	9.5	13	10	1.5	Mature	40+ Years	Good	Major deadwood. Exposed surface rooting.	–	A2	12.1	460
T041	Common Beech *(Fagus sylvatica)*	17	1	800	11	8.5	11	11	3	Mature	<10 years	Poor	Very low bud density. Large areas of bark dessication throughout main stem and scaffold limbs. FFB Meripulus giganteus identified within butress roots North. Ffb were dessicating. Tree is in decline.	Though catorgorised as 'unsuitable to retain', tree should remain as standing deadwood, an important feature in the landscape for habitiat value. The change of land use will have almost no footfall or vehicle access therefore the risk falls within broadly acceptable tollerance of risk	U	0	0
T042	Pedunculate Oak *(Quercus robur)*	24	1	1030	7.5	10	12	10	1.5	Mature	40+ Years	Good	Major deadwood.	–	A2	12.4	483
G043 #	Common Hawthorn x10 *(Crataegus monogyna)*	5.5	10	250 avg	See Plan				1.5	Mature	10+ Years	Fair	Linear boundary group with 4m stem spacings. Deadwood throughout.	–	B2	–	–
G044 #	Common Hawthorn *(Crataegus monogyna)*	5	1	300 avg	See plan				1	Mature	20+ Years	Fair	Unmanaged linear boundary group with 4m stem spacings.	–	B2	–	–

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T045	Horse Chestnut *(Aesculus hippocastanum)*	15	1	700	6	6	6	6	4	Mature	<10 years	Poor	History of large limb removal. Wounds partially occluded. Large open wounds are decaying internally. Livestock damage to stem base. Low bud density. Tree in decline.	–	C2	8.4	222
G046 #	Mixed Species *(Mixed Species)*	17	1	350 avg	See plan				1	Early Mature	10+ Years	Fair	Offsite trees located on embankment leading up to the canal. Oak, Ash, Hawthorn, Elm,willow and blackthorn. Ash group containing 10 stems all displaying level 3 of Ash die back infection. Elm group of 10 stems displaying poor vitality with crown dieback suspected dutch elm desease infection. Good habitiat value	**Remove to facilitate development**	C2	–	–
G047 #	Mixed Species *(Mixed Species)*	18	1	550 avg	See Plan				1.5	Mature	20+ Years	Fair	Offsite trees forming a linear boundary group. 4 Beech, 4 Fir.	–	C2	–	–
H048 #	Common Hawthorn *(Crataegus monogyna)*	2	1	80 avg	See plan				0	Mature	20+ Years	Fair	Well maintained boundary hedge. Approx 1m wide. 0.5m stem spacings.	–	C2	–	–
T049 #	Common Pear *(Pyrus communis)*	6	1	350 avg	2	4	3	4	1	Mature	20+ Years	Fair	Offsite tree.	–	B2	4.2	55
T050 #	Hazel *(Corylus avellana)*	4	10	80 avg	1	1	1	1	0	Young	20+ Years	Fair	Coppice growth. Dense bramble understorey.	–	C2	3	28

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T051	Common ash *(Fraxinus excelsior)*	16	2	500#	8#	8#	8#	8#	3	Mature	<10 years	Poor	Inspection hampered by dense undergrowth. Codominant stems fromnthe base. Canopy retrenchment with over 50% of the canopy dead. Main stem and central canopy dead with historic branch failure. Inonotus hispidus and daldina fruiting bodies present at 1.5m on the main stem and throughout dead wood in upper canopy. QTRA calculates 1/800 - 1/800 risk of harm which puts the tree in an unaceptable threshold of risk Fungus: Inonotus hispidus (Shaggy Polypore) Daldinia concentrica (King Alfreds Cakes) Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%	*Remove tree. If practicle retain 3m of the main stem as standing deadwood*	U	8.5	227
T052	Common ash *(Fraxinus excelsior)*	16	1	800#	8#	8#	8#	8#	3	Mature	<10 years	Poor	Dense Ivy growth covering stem to a height of 10m. 50% of the canopy dead. Historic branch failure. Inonotus hispidus bracket on westerly limb. Poor vitality. QTRA calculates 1/800 - 1/800 risk of harm which puts the tree in an unaceptable threshold of risk Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%	*Remove tree* **Remove tree to facilitate development**	C1	9.6	290

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T053	Common ash *(Fraxinus excelsior)*	16	1	500#	5#	5#	5#	5#	3	Mature	<10 years	Poor	Ivy covered stem to a height of 10m. Canopy thinner and smaller of species of this size and age. Poor vitality. QTRA calculates 1/800 - 1/800 risk of harm which puts the tree in an unaceptable threshold of risk Pests and Diseases: Ash Dieback Infection Level 2: 25% to 50%	*Remove tree* **Remove tree to facilitate development**	C1	6	113
T054	Common ash *(Fraxinus excelsior)*	12	1	300#	5	5	5	5	3	Mature	<10 years	Poor	Ivy covered stem to a height of 10m. Crown retrenchment with large diameter deadwood on the crown extremities.QTRA calculates 1/800 - 1/800 risk of harm which puts the tree in an unaceptable threshold of risk Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%	*Remove tree* **Remove tree to facilitate development**	C1	3.6	41
T055	Pedunculate oak *(Quercus robur)*	16	1	850#	7.5	7.5	7.5	7.5	2.5	Mature	40+ Years	Good	Ivy covered stem. Good form good vitality.	**Remove tree to faciliate development**	A1,2	10.2	327
T056	Pedunculate oak *(Quercus robur)*	16	1	1020	10	10	10	10	2.5	Mature	40+ Years	Good	Good form good vitality. Bat boxes present on main stem. Veteran features	**Remove tree to faciliate development**	A1,2	12.2	468
T057	Pedunculate oak *(Quercus robur)*	10	1	300#	3	3	3	3	3	Semi Mature	40+ Years	Good	Located at the bottom of the embankment. Good form with long potential long life expectancy	**Remove tree to faciliate development**	B1	3.6	41
T058	Common ash *(Fraxinus excelsior)*	16	1	700#	8	8	8	8	3	Mature		Poor	Canal path within target range. Twin stemmed at 2m. Ivy covered up to 10m. Canopy die back with deadwood at crown extremities. Epicormic growth on main stems. 50% of the canopy is dead Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%	*Remove tree. If practicle retain 3m of the main stem as standing deadwood* **Remove tree to facilitate development**	C1	8.4	222

Appendix 2: Site Photographs

Plate 1: **T014**

Plate 2: **T047**

Plate 3: **T038**

Plate 4: **G048**

Plate 5: T029

Plate 6: T041

Plate 7: T042

Plate 8: T056

Appendix 3: Figures

The original version of the drawing was produced in colour. Monochrome copies should not be relied upon.

N

0m 20m 50m 100m

SCALE BAR 1:1000

GENERAL NOTES

- Drawing for Planning purposes only
- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Vyrnwy Reserve - Area A – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
- Based on topographic survey provided by the client.
- Check all dimensions on site.
- Do not scale from this drawing.
- Report any discrepancies and omissions to Cura Terrae Ltd.
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3RD-PARTY INFORMATION

NB This drawing includes information provided by independent surveyors and / or consultants, to whom all queries shall be made. Cura Terrae Ltd can accept no liability for its context or accuracy.

KEY

○ Stem Location # Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees | Category B Trees | Category C Trees | Category U Trees

Root Protection Area (RPA)

KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
A	Apr 25	SR	AB	Updated Survey

CuraTerrae
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Savile Street East
Sheffield S4 7UQ
Tel. (0114) 2669292
www.ecusltd.co.uk

Job

22517 - Vyrnwy Reserve - Area A

Title

Figure 3 - Tree Constraints Plan

By	Date	Scale @ A1	Drg. no.
LE	Jan 2025	1:1000	22517-ARB-01

GENERAL NOTES

- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Vyrnwy Reserve - Area A – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
- Based on topographic survey provided by the client.
- Building layout and masterplan provided by the client.
- Refer to Engineer's details for level and drainage information.
- Check all dimensions on site.
- Do not scale from this drawing.
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3RD-PARTY INFORMATION
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KEY

○ Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees

Category B Trees

Category C Trees

Category U Trees

RPA Root Protection Area (RPA)

Catorgorised U trees to be retained as standing deadwood habitiat
See schedule

KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
B	Apr 25	SR	AB	Updated Survey
A	Mar 25	LE	CTLN	Updated Proposal

CuraTerrae
Unit 4 President Buildings
Savile Street East
Sheffield S4 7UQ
Tel. (0114) 2669292
www.ecusltd.co.uk

Job
22517 - Vyrnwy Reserve - Area A

Title
Figure 4 - Tree Impacts Plan

By	Date	Scale @ A1	Drg. no.
LE	Jan 2025	1:1000	22517-ARB-02

The original version of the drawing was produced in colour. Monochrome copies should not be relied upon.

N

0m 20m 50m 100m
SCALE BAR 1:1000

General

This Arboricultural Method Statement (AMS) details the specific measures to be adopted to ensure that the retained trees are suitably protected for the duration of the proposed development.

No equipment, machinery or materials shall be brought onto the site in connection with the development until this AMS has been submitted to and approved in writing by the Local Planning Authority.

Sequence of Events

For the purpose of protecting the retained trees, the development works on site should be completed in line with the following sequence of events:

- Pre-commencement site meeting
- Tree works
- Installation of tree protection measures
- Construction operations including earthworks, transporting and storage of land spoil
- Removal of tree protection measures

Pre-Commencement Site Meeting

A pre-commencement site meeting should take place prior to any works being started, to finalise plans for the layout of the tree protection measures and to ensure that all potential issues are adequately considered.

The site developer and the project arboriculturist should be in attendance for the meeting. It may also be a requirement for the LPA tree officer to attend and so prior notification of the meeting should be provided to the LPA.

Tree Works

Prior to the commencement of any development operations and the storage of plant, machinery and materials on site, any required tree works should be carried out. The trees to be removed and any pruning works that are required to facilitate the development are detailed in the Tree Survey Schedule at Appendix 1 of the associated arboricultural report.

All tree works should be carried out by a suitably qualified and insured arboricultural contractor and in accordance with the recommendations of BS 3998:2010 Tree work – Recommendations.

It is recommended that trees should be checked in advance of any works by a suitably qualified ecologist to ensure there is no disturbance to nesting birds or roosting bats.

Tree Protection Fencing

Prior to the commencement of any development operations and the storage of plant, machinery and materials on site the tree protective fencing should be located as shown. Where possible this fencing should exclude all site activities from the RPA of retained trees, creating a sacrosanct Construction Exclusion Zone (CEZ).

It should be confirmed by the project arboriculturist that the fencing has been correctly set out on site, prior to the commencement of any other operations.

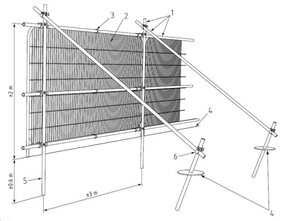
The default specification for tree protection fencing is shown here. However, where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority.

An example of an alternative specification is 2 m tall welded mesh panels on rubber or concrete feet. In such cases, the fence panels should be 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 should 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 or mounted on a block tray.

All-weather notices should be attached to the fencing to indicate that operations are not permitted within the CEZ, with words such as "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Once the tree protection fencing has been installed it should not be altered or removed without prior consultation with the project arboriculturist. If the tree protection fencing needs to be re-positioned to allow for development operations to continue, this must be carried out under the supervision of the project arboriculturist and with prior consent from the LPA.

The tree protective fencing must remain in place until all construction operations on site have been completed and all plant and machinery has been removed.



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Works in Close Proximity to Tree Canopy

Various operations throughout the site may require plant and machinery to operate in close proximity to retained trees, in particular the operations close to G036, T038, T039, T045, G046 and G047

All operations close to retained trees must be carried out using the smallest available machinery that is appropriate for the task, located away from tree branches. Where booms, jibs, etc have the potential to come into contact with branches additional banks persons must be in place to ensure any contact is avoided.

Even minor contact with a tree can cause damage and result in branches falling or dying off. Where an operation cannot be carried out without interfering with the canopy of a retained tree, the advice of the project arboriculturist must be sought.

Installation of Utilities and Services

Where possible all above and below ground utilities and services are to be directed away from the retained trees. Above ground services should be routed away from tree canopies, allowing sufficient space to allow for likely future crown growth. Below ground services should be grouped together and routed away from the RPA of retained trees.

Any below ground utilities or services that must be routed through the RPA should be installed in accordance with BS 5837:2012 clause 7.7.2 and NJUG 10: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

Management of Exposed / Damaged Roots

Provided that works in close proximity to retained trees are carried out in line with the specifications detailed within this report the potential for damage to significant roots is low. However, on occasion approved works that are close to or within the RPA of retained trees can result in accidental root damage or roots becoming exposed.

If any exposed roots are smaller than 25 mm diameter they can be pruned back if required, however roots occurring in clumps or of 25 mm diameter and over should be retained where possible and worked around.

Where the severance of larger roots is unavoidable, the advice of the project arboriculturist must be sought, as such roots might be essential to the tree's health and stability. It may be determined that the design layout must be slightly altered to allow for the retention and adequate protection of significant roots.

Roots that are heavily damaged or severed during approved works may need to be pruned back using a suitable sharp tool, such as secateurs or a handsaw. The cut must be made cleanly, leaving the smallest surface area possible, and beyond any obvious damage, towards the tree that the root is likely to have come from. If it is not clear which direction the root has grown from, the root should be pruned back to both sides of the damage/severance.

A health and safety assessment should be carried out or a regular monitoring regime put in place for trees that have incurred damage to roots in close proximity to their stems or where the damaged roots are 100 mm in diameter or greater. Such damage could lead to instability or a decline in health and condition.

Exposed roots or roots that have been pruned should be immediately recovered with earth to prevent desiccation. If this is not possible they should be wrapped in hessian sheets which are dry in winter, wet in summer. These should be removed prior to backfilling.

Landscaping Works

Where soft landscaping is proposed within the RPA of retained trees, excavations should be kept to the minimum required to provide adequate conditions for the establishment of new shrubs and trees. Excavations should be carried out carefully and by hand, avoiding the severance of any roots larger than 25mm diameter.

Ground levels within the RPA should generally not be altered to avoid the potential for damage to tree roots. Roots are considered to be primarily within the top 0.6 m of the soil. Any excavations have the potential to damage or remove part of the root system and could affect the vigour or stability of the tree. Conversely, increasing the ground level can compact the soil, potentially suffocating the roots and causing them to die off. If minor level changes are unavoidable as part of an approved landscaping scheme, the advice of the project arboriculturist should be sought.

Where fencing is to be installed within the RPA of retained trees this must consist of posts and panels or rails only, trenched footings are not acceptable within the RPA. The holes for posts should be kept to the minimum depth required and excavated using hand tools only.

Fence posts should be erected a minimum of 1.0 m from tree stems. The post locations may need adjusting if significant roots are uncovered, so that the roots remain intact. If wet concrete is to be used, post holes should be lined with an impermeable membrane to prevent soil contamination close to tree roots.

The fencing alignment should allow for a minimum distance of 0.5 m between any tree stem and the fence, providing sufficient room for future growth and minimising the risk of potential conflicts between the fence structure and tree stems.

Any landscaping works that are within the RPA of retained trees or will require the tree protection fencing to be temporarily breached should be carried out in consultation with the project arboriculturist.

Additional Precautions

Consideration should be given to site operations outside of the CEZ that could indirectly impact the retained trees, including the provision of adequate space for site cabins, welfare facilities and other temporary structures.

Site operations should take sufficient account of wide or tall loads in order that they can operate without coming into contact with retained trees. The movement of plant in proximity to trees should be supervised by a banksman, to ensure adequate clearance from trees is maintained at all times.

Fires on sites should generally be avoided. Where fires are unavoidable, they should not be lit in a position where heat could affect the foliage or branches of retained trees. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times.

Any materials that could contaminate the ground around tree roots, such as fuels, oils or cement, should be stored and handled well away from the outer edge of the RPA.

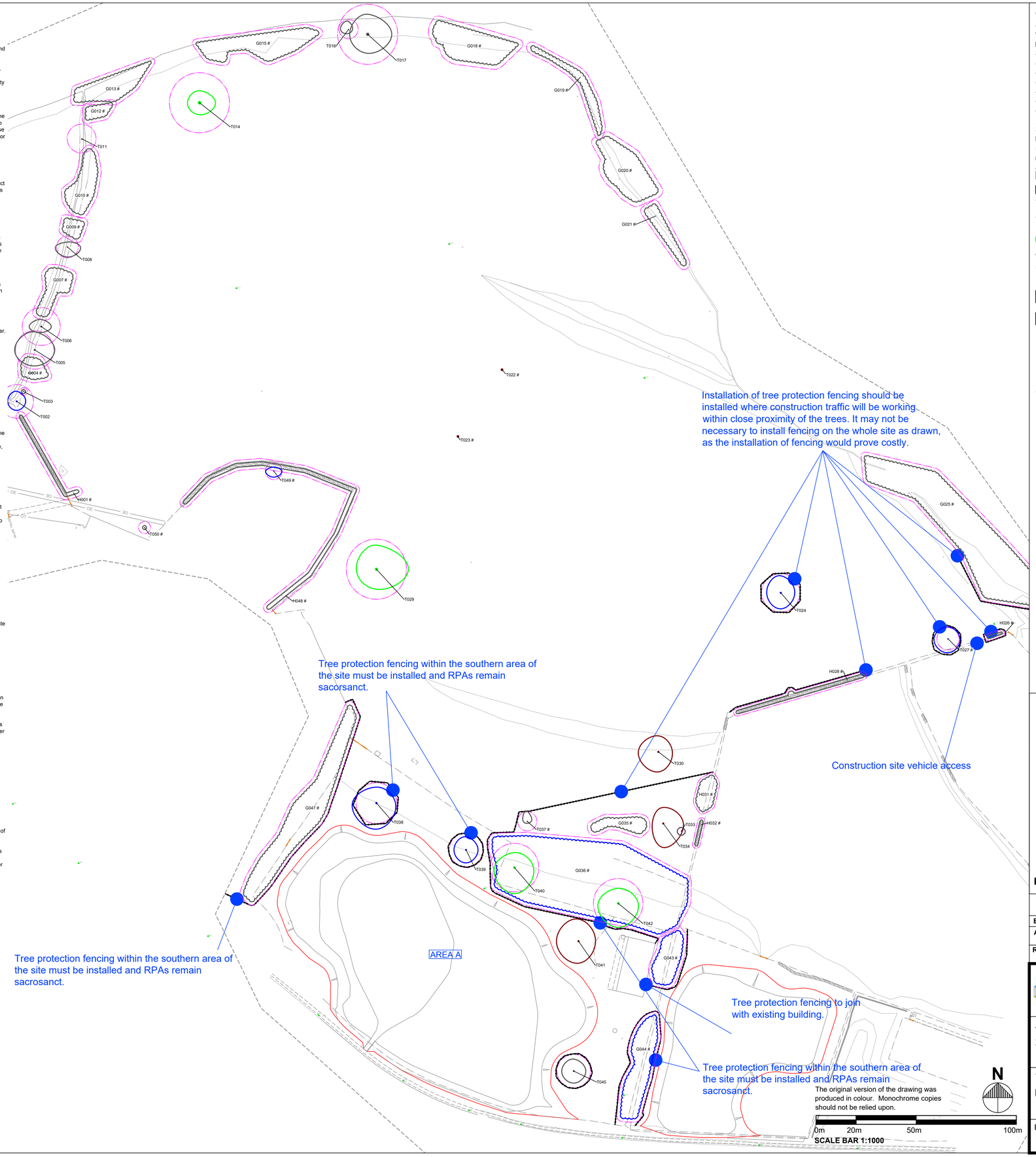
Arboricultural Site Supervision

Site monitoring and supervision by the project arboriculturist is likely to be required on a regular basis throughout the development. The specific site operations in close proximity of retained trees that will require supervision include;

- Tree removal and tree pruning works
- Installation of tree protection measures
- Installation of any service runs in proximity to retained trees

A minimum of one week's notice should be given to the supervising arboriculturist where possible before the start of any works within the RPA of retained trees, to allow the site visit to be scheduled.

All site visits will be recorded with the date and time along with any findings or comments relating to the tree protection measures and the specific operations supervised. These can be made available to the LPA tree officer on request.



GENERAL NOTES

- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Vyrnwy Reserve - Area A – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
- Based on topographic survey provided by the client.
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3RD-PARTY INFORMATION
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KEY

○ Stem Location
Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees
Category B Trees
Category C Trees
Category U Trees

Root Protection Area (RPA)
Tree Protection Fencing*

***See note on drawing**

KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
B	Apr 25	SR	AB	Updated Survey
A	Mar 25	LE	CTLN	Updated proposal

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Title
Figure 5 - Arboricultural Method Statement

By	Date	Scale @ A1	Drg. no.
LE	Jan 2025	1:1000	22517-ARB-03

Appendix 4: Suffolk County Council Ash Die Back Canopy Description

Ash Tree Assessment

The Issue

Identifying the symptoms of Ash Dieback in large trees can be difficult, so a sysyem was needed to enable easy description of the current state of as Ash Tree. Tree Canopy assessment has been widely used since the late 1980's across Europe based on work produced in Switzerland in 1986. In 1990 the Forestry Commission produced a book – 'Assessment of Tree Condition' to enable a standard system for describing the condition of a tree based on the percentage of existing canopy remaining.

Using this methodology Suffolk County Council undertook to describe the health of an Ash in Suffolk.

The steps undertaken

During the summer of 2013/14 Suffolk County Council assessed and photographed Ash accross the county. They determined that there were 4 useful categories to describe Ash canopies. The categories chosen were

- 100% full canopy,
- 75% canopy,
- 50% canopy
- and 25% canopy.

These are represented photographically in the pictures at the end of this Case Study.

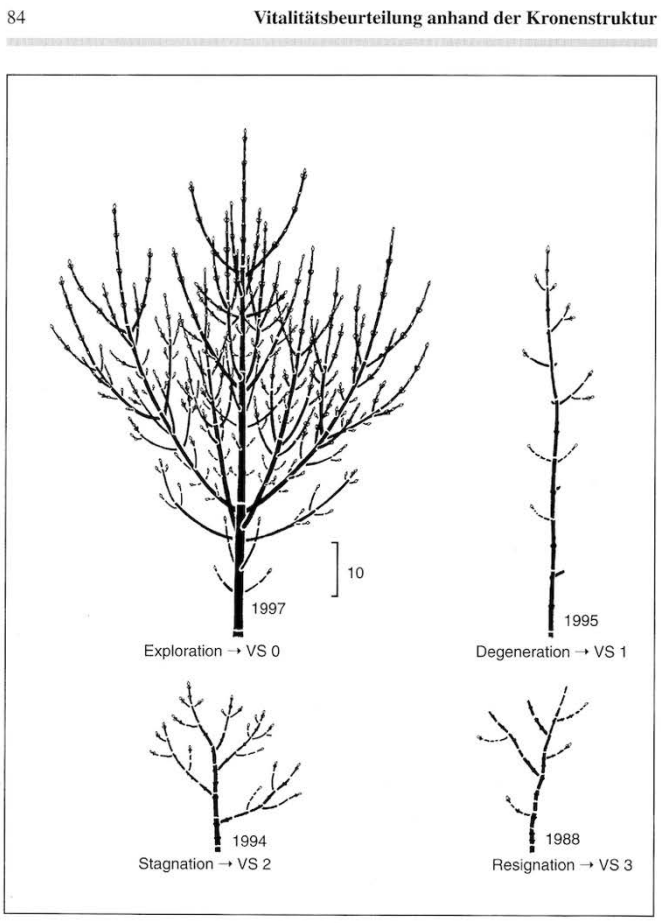
These 4 classes fit with work undertaken in Germany by Professor Andreas Roloff who has been describing the state of vitality of European Trees. He also uses 4 categories – described as

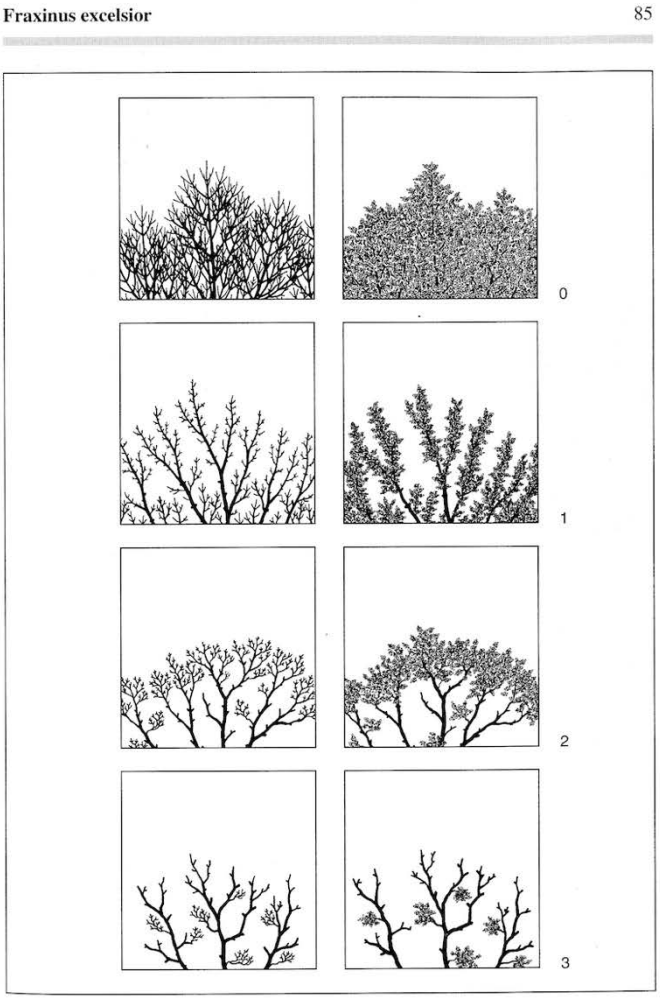
- Vitality Class 0: Healthy vigorous trees showing treetop shoots in the exploration phase: both the main axes and part of the lateral twigs consist of long-shoots. For this reason, a regular net-like branching pattern is developed, which reaches deep into the interior of the crown. The crowns are equally closed and domed, and do not show any greater gap unless a stronger intervention has occurred, such as pruning measures, because such a gap is closed quickly by the intensive ramification. In summer, a dense foliage arises without any greater gap.
- Vitality Class 1: Weakened trees show treetop shoots in the degeneration phase. Thus, spears/"fox tails" are formed, rising above the canopy. The leaves on these spears are dense and grow all around them (at the top of the lateral short-shoots or shortshoot chains). The crowns make a frazzled impression on the outside, and have a fastigiated appearance, because the airspace between the spears is not completely filled by leaves and twigs, and the crown has a spiky outline. Inside the crown, the branching pattern, and hence the foliage, is quite dense. In this vitality class, straight percurrent main axes of the treetop branches are still dominant, but the crowns no longer look as intact as in class 0 because of the spears shooting out of the canopy.
- Vitality Class 2: In obviously less vigorous trees, the treetop shoots begin to build short-shoots in the stagnation phase. The leafless state could be designated as the claw stage, because the short-shoot chains in the outside of the crowns grow longer, are predominant, and stretch claw-like to the light. These short-shoot chains, growing too long, break off in summer in thunderstorms and heavy rains, and strew the forest floor in

declining stands. Under normal circumstances, trees get rid of parts of their unimportant twigs in the inner and lower crown parts in this way. However, if the treetop shoots themselves are declining, the self-pruning of twigs progresses into the outskirts of the crown, and the crowns become thin from the inside outwards. The cause for this occurrence is not premature leaf fall, but broken short-shoot chains, a lack of shoots, and dead buds and twigs. The branching pattern shows a bushy and lumpy accumulation in the periphery of the crown. This accumulation causes summer and winter bushy crown structures and greater gaps. The crown periphery still has hardly any straight percurrent branches.

- Vitality class 3:, In considerably damaged or declining trees of the crowns finally fall apart by the breaking off of larger branches and the dieback of whole crown parts. The tree seems to consist only of more or less surplus sub-crowns, dispersed randomly in the airspace and forming whip-like structures. The treetop is often dying back or is already dead, because the treetop shoots grew in the retraction phase.

These 4 vitality classes are shown below for Ash.





The work in Germany and Suffolk complements each other and establishes the ability to be able to assisgn an ash tree to 1 of 4 categories, which describe the trees current health or vitality. This is a simple and useful method for describing the current state of an Ash's heatlh.

The Outcome

Using this 4 category framework, allows a tree to be assigned to a category, showing its current state of health, enabling data on the tree to be collected. The suggestion going forward is that these 4 classes are used as described as:

Ash Health Class 1 – 100 – 75% Canopy (Vitality Class 0)

Ash Health Class 2 – 75% -50% Canopy (Vitality Class 1)

Ash Health Class 3 – 50% - 25% Canopy (Vitality Class 2)

Ash Health Class 4 – 25% - 0% Canopy (Vitality Class 3)

Figure 1: Photos of Dieback of ash trees

0% Dieback - Healthy Crown

25% Dieback

50% Dieback

75% Dieback