

County Tree Care Ltd

QUALIFIED ARBORISTS

Qualified in Arboriculture & Horticulture



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Project Name :

Tree Survey & Arboricultural Impact Assessment of mature trees and hedgerows at a site in Waterrock, Co. Cork

Date : 17/10/22

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1.1 : Client Brief

County Tree Care Ltd was asked by Clancy Construction Ltd to carry out a tree survey at a greenfield site in Waterrock, Co. Cork. The aim was to survey hedgerows and trees within the same hedgerows. With the details obtained in the survey to prepare an Arboricultural Assessment and Method Statement that can be used to make sound arboricultural decisions relating to design and construction of any new development.

1.2 : Description of site

The site is farmland, made up of arable land that is well drained. Currently it is used as pastural grazing for cattle. The surrounding fields have many ditches/hedgerows that are not being maintained that are used to define periphery boundaries and boundaries between fields. The hedgerows that were surveyed are not connected to any other hedgerow at either end. They stand alone as a division between two fields. A laneway runs either end at 90° and a laneway runs down the centre. The hedges that were surveyed run parallel along either side of the laneway.

1.3 : Methodology

Only trees over 15cm in diameter @ 1.5m were surveyed. Recommendations will be provided based on the survey. Aluminium tree tags were placed on the trees that were surveyed. They number from 771 – 783. They are placed at 1.5m high on the North side of the tree stem.

The survey methodology follows the recommendations contained within BS : 5837 (2012), Trees in relation to design, demolition and construction. Any tree surgery work to be carried out must follow Industry Best Practice BS : 3998 (2010). The analysis of the trees was undertaken using the VTA method as developed by Mattheck and Breloer (1994).

1.4 : Limitations of the survey

This survey should be regarded as a preliminary assessment of the trees and deals with the current condition as identified during this survey only.

Any tree whether it has visible weakness or not, will fail if the force applied exceeds the strength of the tree or its parts. The details within this survey are based on the condition of the trees during the survey period only. No invasive or destructive evaluation techniques were used and all findings are based on the knowledge and expertise of the undersigned. Trees are living organisms that are subject to the stresses of climatic extremes and attack from decay fungi and injurious diseases. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in this survey may not arise in the future. By examining the trees, rating their likelihood of causing damage and injury and recommending action to abate the hazard, we act to reduce but not eliminate the risks associated with the trees.

George Earle,
County Tree Care Ltd

1.5 : Relevant Legislation

There are no Tree Protection Orders (TPOs) on any of the trees on this site. However under Section 37 of the Forestry Act : 1946, it is illegal to uproot any tree over ten years old or to cut down any tree of any age (including trees which form part of a hedgerow), unless a Felling Notice has been lodged at the Garda Station nearest to the trees at least 21 days before felling commences. A felling license can be obtained by contacting the Dept of Agriculture, forestry section.

The requirement for a felling licence for the uprooting or cutting down of trees does not apply where :

- The tree in question is a hazel, apple, plum, damson, pear or cherry tree grown for the value of its fruit
- The tree in question is less than 100ft or 30m from a dwelling other than a wall or temporary structure
- The tree in question is standing in a County or other Borough or an urban district that is within the boundaries of a town council, or city council area
- The tree is considered dangerous and hazardous

Other exceptions apply in the case of local authority road construction, road safety and electricity supply operations.

The Act is administered by the Forest Service, Department of Agriculture, Fisheries and Food . The Felling Section of the Forest Service is based in Johnstown Castle, Co. Wexford (053-9160200 or 1890-200223)

Trees may contain bats. Bats are protected under Schedule 5 of the Wildlife Act 1976 and Schedule 1 of the European Communities (Natural Habitats) Regulations 1997. Professional advice from a licenced surveyor should be sought prior to any works commencing on trees



1.6 : Terminology

Arboricultural Comments : Refers to the tree's condition and suitability for the site

Common name : Most widely used non botanical name

Co-dominant stems : Two branches assuming the role of leading stems. When growing close together may form a weak attachment (included bark) at their point of contact. Trees with this defect may be in danger of splitting at this weak attachment.

Included Bark : Pattern of development at branch junctions where bark is turned inward rather than pushed out

Crown spread : Measured in meters north, south, east, west

Decay Fungi : Refers to those species of fungi which degrade living wood and which may, depending on the degree of degradation, render the tree structurally unsound

Defects : Refers to cracks, storm damage and any other damage mechanical or biological

Girth : Diameter of the trunk (millimetres) at 1.5m above grade level. MS inserted after this measurement means multi-stemmed

Genus & Species : Refers to the botanical name for the tree

Height : Measured in meters given to the nearest .5m

Monitor : Refers to trees which need to be re-surveyed on a yearly basis to assess their condition. This timescale may be sooner where works or adverse weather conditions have impacted negatively on the trees

Overhaul : A reference to standard tree surgery work which consists of the removal of deadwood, crossing branches and balancing of the crown where appropriate

Recommendations : Indicates surgery work necessary for the retention or, where necessary, removal of the tree

Major deadwood : Dead branch/limb that is between 150mm – 250mm in diameter

Moderate deadwood : Dead branch/limb that is between 100mm – 150mm in diameter

Minor deadwood : Dead branch/limb that is between 50mm – 100mm in diameter

Basal Cavity : Cavity or opening located at the lower region of the tree at ground level

Stem Cavity : Cavity or opening located on the main stem/trunk of the tree

RPA : Root Protection Area, calculated as a circle with a radius of 12 times the diameter of the stem of the tree measured @ 1.5m. The RPA is then represented in m²

ERC estimated remaining contribution that the tree can make if retained

Terminology Continued

Tree no : Refers to numbered tag fixed to tree during survey. The tag numbers in this survey are from 771 - 783. The trees will be referred to with the prefix T, for example the first tree surveyed was T771.

Age : Age cannot be exact unless invasive drilling technique are used. Therefore an estimate is given and categorised as

- Young (Y) - < 15 years old
- Early Mature (EM) -15-25 years old
- Mature (MA) – Tree has reached full maturity, over 25 years old
- Over Mature (OM) – Tree is over mature and showing signs of decline

Physiological Condition and Comments based on a three tier system :

- Good = Good health and vigour displayed
- Fair = Healthy and reasonable vigour
- Poor = Showing signs of decline, disease or decay

BS 5837 : 2012 determines four retention categories following assessment

Retention Category (RC)

- Category **A** : Trees whose retention is most desirable. Those of high quality and in such condition to make a substantial contribution
- Category **B** : Trees whose retention is desirable. Those of moderate quality and value so as to make a significant contribution
- Category **C** : Trees which could be retained. Those of low quality and value, but can make a contribution until new planting is established.
- For trees in categories A to C there are further subcategories (1,2,3)
- Subcategories 1,2 and 3 are intended to reflect arboricultural and landscape qualities and cultural values, respectively.
- Category **U** : Trees for removal. Trees that should be removed for reasons of sound arboricultural management



1.7: Colour Identification of Tree Categories

Tree Class	Colour Code
Class A	Green
Class B	Blue
Class C	Grey
Class U	Red

1.8 : References

BS 5837 : 2012. Tree in Relation to Design, Demolition and Construction

BS 3998 : 2010. Tree Work Recommendations

Principles of Tree Hazard Assessment and Management ; David Lonsdale

Mattheck and Breloer (1994). The body language of trees



Appendix 2

Tag No.	Species	Age	Height	Diameter	Condition	Crown Spread	RPA (M ²)	Comments	Recommendations	RC	ERC
771	Sycamore (<i>Acer pseudo Platanus</i>)	M	12m	40cm	Fair	N 3m S 4m E 2m W 5m	72	Dense ivy on main stem, ivy penetrating beneath the cambium, possible pathogen entry points, straight stem to 4m, three large limbs growing from the base West side make up ½ of lower crown, minor cavity @3m North side of main stem, limb broken East side of main stem @4m, minor decay observed at this point, a mallet test resulted in sound wood and no cavity present, branches cut on East side @3m by machinery, epicormic growth from the cuts	Decay on main stem prevents long term sustainability and it is recommended to fell and remove this tree	U	<10

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Tag No.	Species	Age	Height	Diameter	Condition	Crown Spread	RPA (M ²)	Comments	Recommendations	RC	ERC
772	Ash (<i>Fraxinus excelsior</i>)	Y	8m	30cm	Poor	N 3m S 2m E 2m W 3m	41	Coppiced previously aprox 15yrs ago @ 2m, & pollarded @ 5m aprox 5yrs ago, heavy ivy on main stem into upper crown, multiple branches@2m, one main leader, crown is restricted by T771, poor developed crown branches previously cut on East side @ 4m,	High likelihood of future contamination with ash dieback (<i>Hymenoscyphus fraxineus</i>), poorly formed tree. It is recommended to fell and remove this tree	U	<10

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773	Ash (<i>Fraxinus excelsior</i>)	M	12m	90cm	Fair	N 6m S 5m E 3m W 1m	366	Growing from a stone ditch, large bole to 1m, divides into two stems @1m & 3 @1.5m, minor cavity @ 1.2m East side, dense ivy on main leader into upper crown, branches have been cut on West side leading to an imbalance of the crown, heavier crown to the North and East,	Cavity poses a future hazard over the laneway, high possibility of future contamination with ash dieback (<i>Hymenoscyphus fraxineus</i>), it is recommended to fell and remove this tree	U	<10

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774	Ash (<i>Fraxinus excelsior</i>)	Y	8m	25cm	Fair	N 4m S 4m E 4m W 4m	28	Straight stem to 1.5m splits in 2 at this point East and West, poor union and compressed wood between the co-dominant stems, heavy ivy on stems to 4m, broken branch @4m East side, tree has been pollarded (topped) approx 5 yrs previous and the epicormic growth is broken at this point,	Poorly formed tree with high possibility of contamination with ash dieback (<i>Hymenoscyphus fraxineus</i>), it is recommended to fell and remove this tree	U	<10

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775	Ash (<i>Fraxinus excelsior</i>)	Y	11m	25cm	Poor	N 5m S 4m E 4m W 5m	28	Straight stem to 2.5m, was cut to this height approx 20yrs previous, three main stems averaging 15cm diameter, sparse crown, minor deadwood in upper crown, heavy ivy on main stem,	Tree is showing poor vigour and has a high likelihood of future contamination with ash dieback (<i>Hymenoscyphus fraxineus</i>), it is recommended to fell and remove this tree	U	<10

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776	Ash (<i>Fraxinus excelsior</i>)	M	14m	90cm (x 2)	Poor	N 4m S 6m E 5m W 6m	366	Large mature tree, co-dominant stems @1m, signs of decay between the stems @1m, southerly stem is cracked where a limb with included bark has broken out @ 2.5m, heavy ivy growth on main stem into upper canopy, deadwood in mid and upper crown, dieback in upper crown on East side due to compaction on laneway, West side of crown healthy, branches cut back on East side @6m & 8m have no new growth	Fell Tree. With the Southern stem removed due to the decay the tree will be unbalanced with a poor crown on one side. However, retaining the tree should be given consideration by reducing the height to 4m and retain within the hedgerow if enough epicormic growth emerges to sustain it. In accordance with BS 5837 : 2012 4.5.7	U	<10

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777	Small leaved lime (<i>Tilia cordata</i>)	M	12m	75cm (x 2)	Fair	N 5m S 3m E 3m W 3m	255	Medium sized tree, co-dominant stems from .5m, large amount of sucker growth at the base West side, minor ivy growth on Northerly stem, canopy is heavier growing North, dense crown with minor crossing branches in mid and upper crown, branches have been cut back previous @2m & 4m West side	Unbalanced tree and will need to be reduced biennially due to its size, the resulting epicormic growth will become a safety issue eventually, it is recommended to fell and remove this tree	U	<10

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778	Ash (<i>Fraxinus excelsior</i>)	M	11m	40cm	Poor	N 4m S 4m E 5m W 3m	72	Large trunk, was cut back on West side in the past, poor occlusion on old cuts, tree is leaning East 80° unbalanced crown, dieback on West side, evidence of ash dieback disease (<i>Hymenoscyphus fraxineus</i>)	The tree will not be able to contribute to the landscape going forward and will present a hazard in a year or two because of the ash dieback that it suffers from at present	U	<1

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Tag No.	Species	Age	Height	Diameter	Condition	Crown Spread	RPA (M ²)	Comments	Recommendations	RC	ERC
779	Sycamore (<i>Acer Pseudoplatanus</i>)	M	13m	120cm (x 7)	Fair	N 4m S 3m E 4m W 5m	652	Multi-stemmed (7) @1m, coppiced aprox 20 years previous, compressed wood between the unions of two stems, cambium damage on East @2m from machinery, growing on an earth and stone bank, the tree shows poor form with the multi stem structure, future pollarding will always be a safety issue	It is recommended to fell and remove this tree	U	<10

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780	Sycamore (<i>Acer pseudoplatanus</i>)	M	14m	45cm	Fair	N 5m S 4m E 4m W 4m	92	Straight stem to 4m, evenly distributed branch structure, slight lean to the North in upper crown, Heavy ivy was cut previous, branches were cut back on West, sucker growth at the base, epicormic growth on East side where branches were cut @3m, this tree will become a large tree and branch drop under high winds may pose a future hazard to pedestrians and vehicular traffic	It is recommended to fell and remove this tree	U	<10

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781	Sycamore (<i>Acer pseudoplatanus</i>)	M	10m	80cm (x 4)	Fair	N 3m S 3m E 5m W 4m	222	Coppiced 20yrs previous @.5m, 4 main stems making up the canopy (2 @.5 & 2 @ 1.5), Heavy ivy growth on all stems, tree is congested with the elms on North and South, not a tree of significance but contributing to the landscape, not an immediate hazard, dense crown with crossing branches in mid and upper crown	Remove ivy and re-assess for any defects, clean crown of any crossing, dead or cracked branches, Consider felling and replanting with a more suitable tree species with higher amenity value	C3	>20

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Tag No.	Species	Age	Height	Diameter	Condition	Crown Spread	RPA (M ²)	Comments	Recommendations	RC	ERC
782	Sycamore (<i>Acer pseudoplatanus</i>)	M	13m	35cm (x 3)	Poor	N 4m S 5m E 4m W 5m	N/A	Major basal decay between all three stems, dangerous tree, relative to targets that may present themselves	Fell tree	U	N/A

Tag No.	Species	Age	Height	Diameter	Condition	Crown Spread	RPA (M ²)	Comments	Recommendations	RC	ERC
783	Ash (<i>Fraxinus excelsior</i>)	Y	13m	20cm	Poor	N 4m S 3m E 3m W 4m	N/A	Stem is cracked @1m, Hazardous tree	Fell tree	U	N/A



Hedgerow Classification Schedule :

Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
1	Bracken (<i>Pteridium aquilinum</i>) Rye grass (<i>Lolium perenne</i>) Ivy (<i>Hedera hibernica</i>) Willowherb (<i>Epilobium</i>) Stinging nettle (<i>Urtica dioica</i>) Bramble (<i>Rubus sp</i>) Blackthorn (<i>Prunus spinosa</i>)	5m	4m	Y	Fair	Constructed of an earth and stone ditch, is 138 m in length, the hedge is wide at the South side @6m but tapers to 3m after 30m, not maintained regularly, some trees have been pollarded approx five years previous, there is one large ash, blackthorn and elm understorey trees coming through, dense bramble and bracken for the first 30m with low density willowherb also, after 30m there is a line of elms 5m in height, mostly dead, some healthy elm saplings coming through, after 30m the field layer is made up of ivy, rye grass, low density bracken and stinging nettle, T773	This hedgerow is of minor significance and its removal is recommended	Historical -1 Species diversity - 1 Ground flora - 2 Structure - 2 Habitat Connectivity - 0 Landscape - 2

Colour code On Map : Light Blue



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
2	Bracken (<i>Pteridium aquilinum</i>) Rye grass (<i>Lolium perenne</i>) Bramble (<i>Rubus sp</i>) Blackthorn (<i>Prunus spinosa</i>) Hawthorn (<i>Crataegus monogyna</i>) Elm (<i>Ulmus glabra</i>) Bindweed (<i>Convolvulus</i>)	5m	3m	M	Fair	This hedge comprises an earth and stone ditch & is 70 m in length, East side of laneway. It is made up with mainly small elm trees of diameter averaging 10cm, some of these trees are dead but most are still alive presenting a healthy hedge although in need of maintenance. There is a healthy understory of blackthorn beneath the canopy of the elms, beneath the blackthorn is a field layer of dense bracken, bindweed was observed in places, this will become dense and will eventually engulf some species if left unchecked. The lower canopy branches of the elms and blackthorn are encroaching into the field on the East	This hedgerow is of low value and its removal is recommended	Historical -1 Species diversity - 2 Ground flora - 1 Structure - 2 Habitat Connectivity -0 Landscape - 2

Colour Code On Map: Magenta



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
3	Elm (<i>Ulmus glabra</i>) Lime (<i>Tilia cordata</i>) Blackthorn (<i>Prunus spinosa</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Bindweed (<i>Convolvulus</i>) Ivy (<i>Hedera hibernica</i>) Stinging nettle (<i>Urtica dioica</i>)	6m	4m	M	Fair	This hedge is made of an earth and stone ditch & is 178 m in length, East side of laneway. There is a small leaved lime located 3m from the start of hedge 3, the hedge contains mainly healthy elm species small trees averaging 10cm in stem diameter and 4m in height, there are some towards the end of hedge 3 that are dead, under these are blackthorn species coming through, the field layer is dense with bracken, ivy and medium density nettle, bindweed was observed, T777	This hedgerow is of low value to the site and its removal is recommended	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape - 2

Colour Code On Map : Grey



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
4	Sycamore (<i>Acer pseudo platanus</i>) Elm (<i>Ulmus glabra</i>) Blackthorn (<i>Prunus spinosa</i>) Elder (<i>Sambucus nigra</i>) Bramble (<i>Rubus</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Bindweed (<i>Convolvulus</i>) Ivy (<i>Hedera hibernica</i>) Stinging nettle (<i>Urtica dioica</i>)	6m	4m	M	Fair	This hedge is on an earth and stone ditch is 136 m in length East side of laneway. Poorly maintained, it has a notable amount of sycamore relative to hedges 1, 2 & 3. There are small dead elms in the centre and towards the end with sycamore saplings coming through as an understorey, sporadic appearances of blackthorn and elder. There is dense ivy on the ground and on elm stems, also dense bramble and nettle for the last 20m at the North end of the hedgerow. The end of the hedge is 6m wide for the last 10m, T778 ash, T780 sycamore, large dead elm, T782 sycamore	Remove any bindweed that may be present, remove any dead trees, remove ivy from tree stems, sideface and reduce height to 4m where possible	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape - 2

Colour Code On Map : Orange



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
5	Sycamore (<i>Acer pseudo platanus</i>) Elm (<i>Ulmus glabra</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Bindweed (<i>Convolvulus</i>) Ivy (<i>Hedera hibernica</i>) Stinging nettle (<i>Urtica dioica</i>) Gorse (<i>Ulex sp</i>)	2m	3m	M	Fair	This hedge on an earth and stone ditch is 189 m in length on the West side of the laneway, there is a group of dead elms at the start and for 30m the hedge is made up of gorse, bramble and nettle 2m in height, after 30m the hedge changes after a drainage dyke that runs into it West to East. From this point on there is a line of elms approximately 5m in height, dense ivy is growing on most of the stems, T771 sycamore, T772 ash, dead elm, T774 ash	This hedgerow is of minor significance and its removal is recommended	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape - 2

Colour Code On Map : Violet

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Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
6	Elm (<i>Ulmus glabra</i>) Ash (<i>Fraxinus excelsior</i>) Blackthorn (<i>Prunus spinosa</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Bindweed (<i>Convolvulus</i>) Ivy (<i>Hedera hibernica</i>)	12m	3m	M	Fair	Hedgerow is 33m in length, on a stone and earth ditch 1.5m high, sitting on the ditch is a line of elms that are in poor health, some are dead, dense ivy on the ground and on the tree stems, honeysuckle field layer, also bramble, blackthorn understory coming through sporadically, T775 ash, T776 ash,	This hedgerow is of minor significance and its removal is recommended	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape -2

Colour Code On Map : Dark Blue



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
7	Elm (<i>Ulmus glabra</i>) Blackthorn (<i>Prunus spinosa</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Bindweed (<i>Convolvulus</i>) Ivy (<i>Hedera hibernica</i>) Bramble (<i>Rubus sp</i>)	11m	4m	M	Fair	This hedgerow is 40m in length, it is made of an earth and stone ditch 1.5m high, it comprises of young elms saplings that are coming through with an average stem diameter of 15cm and height of approximately 3m, there are dead elms among the healthy ones, these dead ones are bigger approx 4 & 5m in height, heavy ivy growth on the tree stems and on the ground, blackthorn appearing as an understory tree, some nettle and bramble comprising the field layer	This hedgerow is of low value and its removal is recommended	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape -2

Colour Code On Map : Light Green



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
8	Sycamore (<i>Acer pseudoplatanus</i>) Elm (<i>Ulmus glabra</i>) Blackthorn (<i>Prunus spinosa</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Bindweed (<i>Convolvulus</i>) Ivy (<i>Hedera hibernica</i>) Bramble (<i>Rubus sp</i>)	11m	4m	M	Fair	This hedgerow is 154m in length, it is comprised of an earth and stone ditch 1.5m high, it contains mature sycamores and elms that are in poor health, dead elms that are 13m high, the first 20m is wide @7m and contains a dense field layer of bramble, nettle, bracken, some sycamore saplings coming through with sycamore being the most dominant tree species in this hedgerow, poorly maintained, large dead elm, T779 sycamore, T781 sycamore, T783 ash	Remove any dead trees, remove ivy from the stems of any trees that are alive, sideface and reduce height of hedge to 4m where possible	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape -2

Colour Code On Map : Yellow



Hedge No.	Species	Height	Width	Age	Condition	Comments	Recommendations	Category Grading
9	Ash (<i>Fraxinus excelsior</i>) Sycamore (<i>Acer pseudoplatanus</i>) Elm (<i>Ulmus glabra</i>) Blackthorn (<i>Prunus spinosa</i>) Honeysuckle (<i>Lonicera periclymenum</i>) Gorse (<i>Ulex europaeus</i>) Ivy (<i>Hedera hibernica</i>) Bramble (<i>Rubus sp</i>)	4 m	3m	M	Fair	Densely populated with gorse, some sapling elm coming through at 2 m, small trees such as ash and sycamore being the dominant tree species in this hedge, dense bramble at the base of the gorse, there is a deeply excavated drain on the South side of the ditch facilitating dense growth field layer vegetation	It is recommended to remove this hedgerow	Historical -1 Species diversity - 2 Ground flora - 2 Structure - 2 Habitat Connectivity -0 Landscape -2

Colour Code on map : Red



Appendix 3



Fig 1 : T771



Fig 2 : T772



Fig 3 : T773



Fig 4 : T774



Fig 5 : T775



Fig 6 : T776



Fig 7 : T777



Fig 8 : T778



Fig 9 : T779



Fig 10 :T780



Fig 11 : T781



Fig 12 : T782



Fig 13 : T783



Fig 14: Hedge1



Fig 15 : Hedge 2



Fig 16 : Hedge 3



Fig 17 : Hedge 4



Fig 18 : Hedge 5



Fig 19 : Hedge 6



Fig 20 : hedge 7



Fig 21 : Hedge 8



Fig 22: Hedge 9

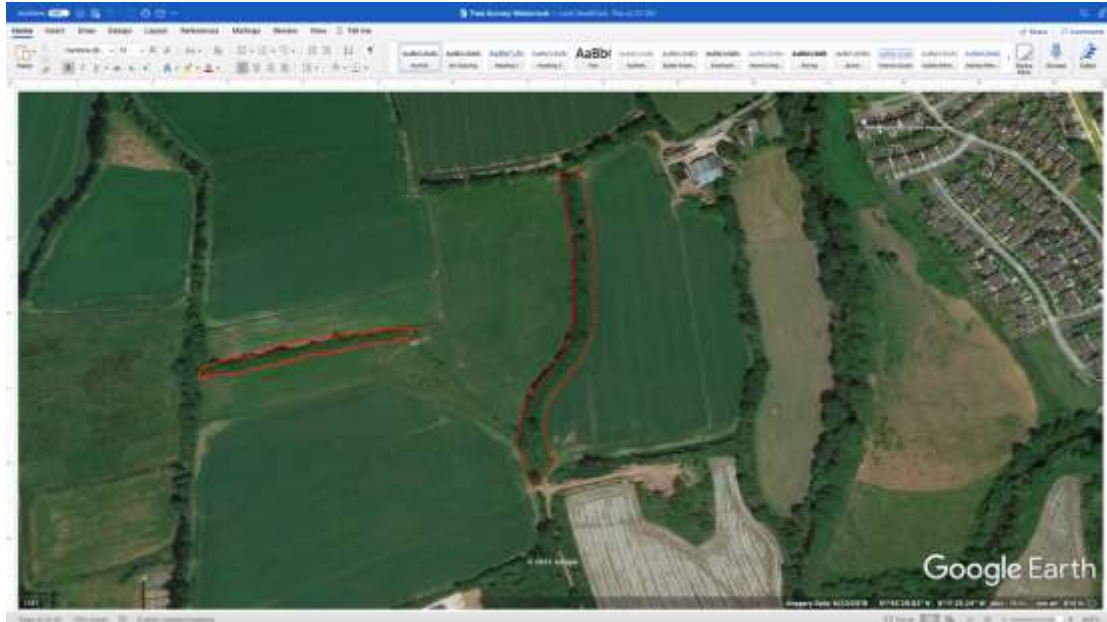


Fig 23 : Aerial photo of hedgerows in total that were surveyed.

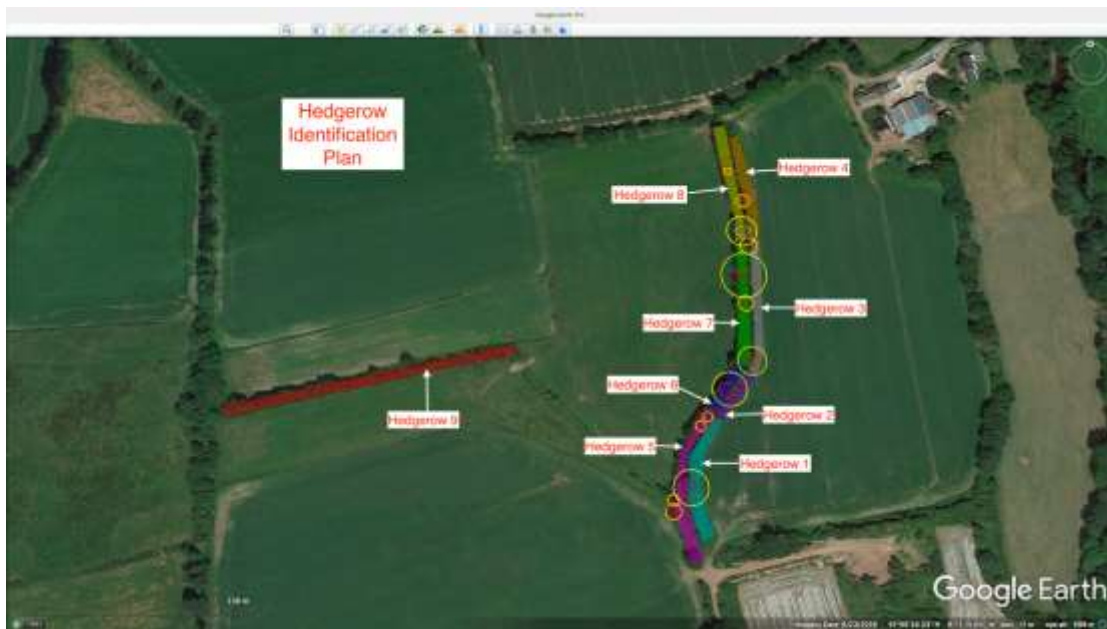


Fig 24 : Aerial photo of individual hedgerows surveyed



Fig 25 : Aerial photo of the Tree Constraints Plan



Fig 26 : Aerial photo of the Tree Protection Plan

County Tree Care Ltd

QUALIFIED ARBORISTS

Qualified in Arboriculture & Horticulture



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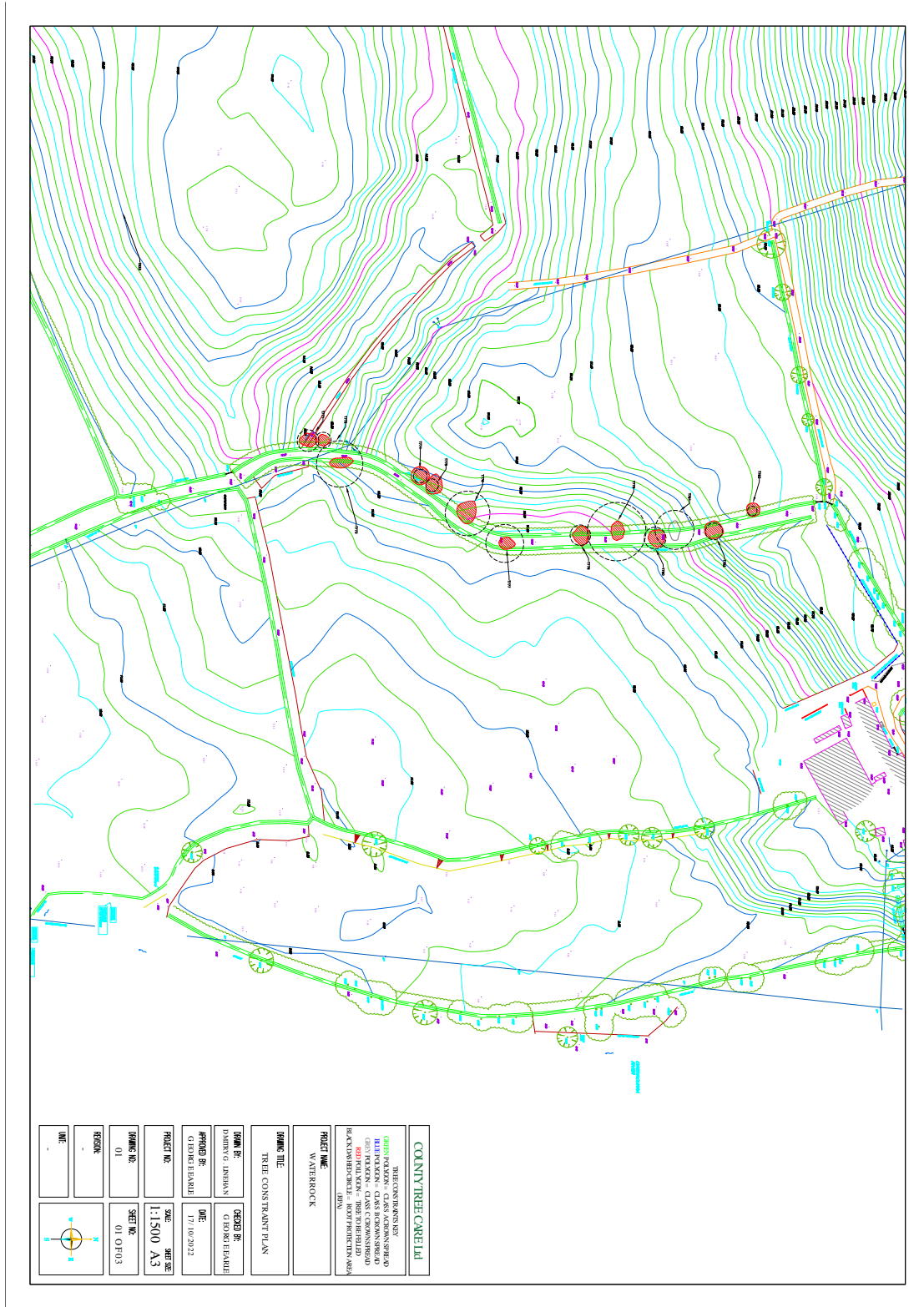


Fig 27 : Tree Constraints Plan PDF

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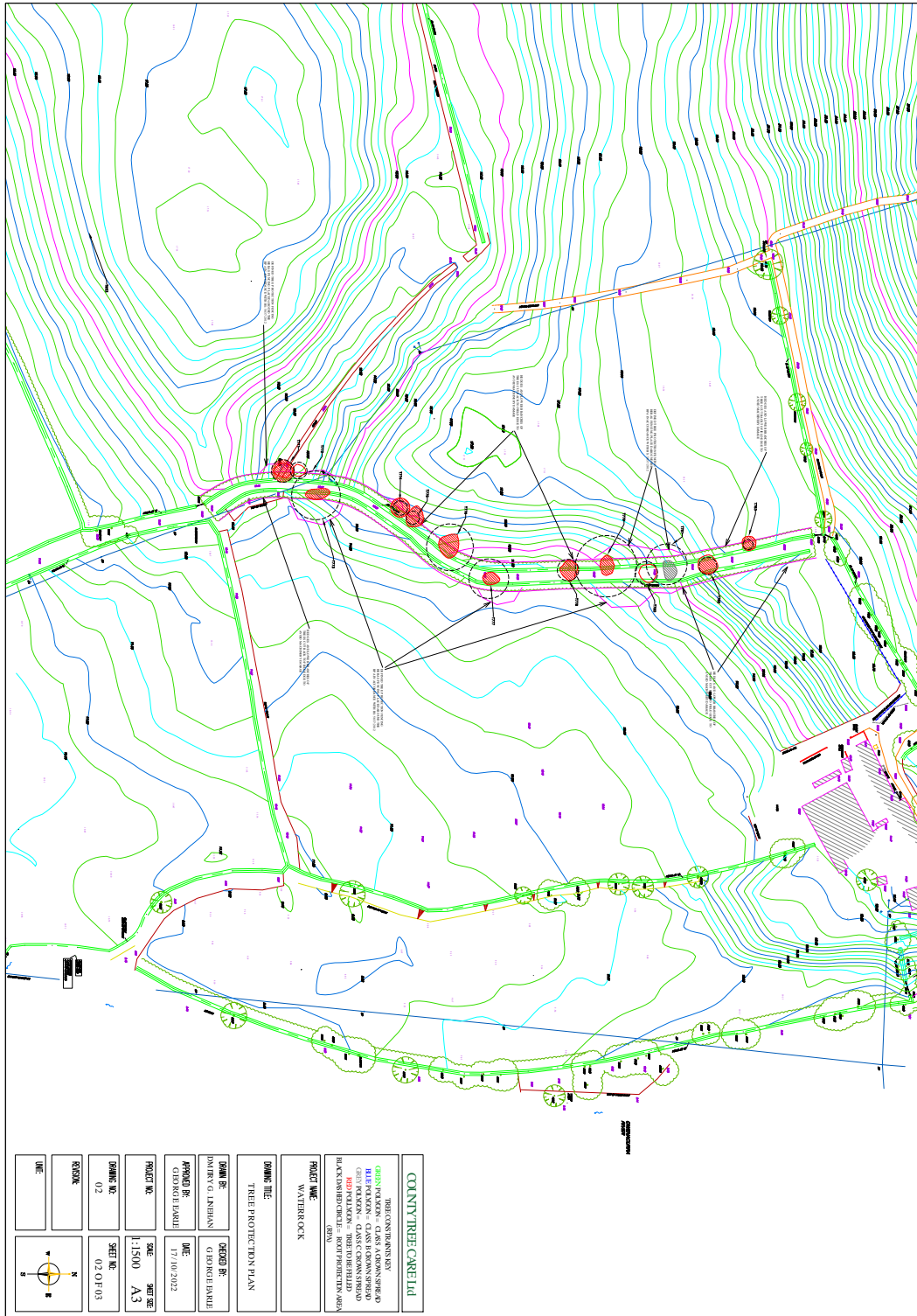


Fig 28 : Tree Protection Plan PDF

Appendix 4 :
Identification of Preliminary Tree Constraints :

- Please read in conjunction with Fig 25 & Fig 27 and the topographical AutoCAD file ‘Tree Constraints Plan’

In accordance with BS 5837 : 2012, below ground constraints, or root protection areas (RPAs), for the surveyed trees have been plotted onto the tree survey plan for the site. These are represented as a circle centred on the base of each tree stem with a radius of 12 times diameter measured at 1.5m above ground level.

With reference to BS 5837 : 2012, a root protection area (RPA) is defined as ‘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’. ‘The default position (when considering design layout in relation to RPAs) should be that structures are located outside the RPAs of trees to be retained’.

BS 5837 : 2012 states (4.6.2) that, ‘where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced’ The BS goes on to state that, ‘ modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution’, and that any deviation from the original circular plot should take into account :

- Morphology and disposition of roots
- Topography and drainage
- Soil type and structure
- The likely tolerance of the tree to root damage / disturbance

Root systems can be damaged in a number of ways as follows :

- Severance of a root will destroy all parts of the root beyond that point. The larger the root severed, the greater the impact on the tree. If the roots are damaged close to the trunk, the anchorage and stability of the tree can be affected.
- The root bark protects the root from decay and is essential for further root growth. If damage to the bark extends around the whole circumference, the root beyond that point will be killed.
- Soil compaction, which may occur from storage of material or passage of heavy equipment over the root area, can restrict and even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.
- Lowering the soil level will strip out the mass of roots near the surface



Below Ground Tree Constraints continued :

- Raising soil levels will have the same effect as soil compaction
- Incorrect selection and application of herbicide
- Spillage of oils or other harmful materials

Above Ground Constraints :

- The current and ultimate height and spread of the trees, in relation to any new building final position.
- The effect that construction requirements might have on the amenity value of trees, both on and near the site, including pruning to facilitate access and working space.
- The requirement to protect the overhanging canopies of trees where they could be damaged by machinery, vehicles, barriers or scaffolding, where, it will be necessary to increase the extent of the tree protection barriers to contain the canopy.
- The proposed end use of the space adjacent to the retained trees.



Tree Protection Plan

- Please read in conjunction with Fig 26 & Fig 28 and the topographical AutoCAD file 'Tree Protection Plan'

Protection of trees. A protective barrier, 2.3m high and comprising a vertical and horizontal framework of scaffolding, well braced to resist impacts and securely supporting weldmesh panels, (as illustrated in Fig 29 & Fig 30 supplied), shall be erected around the base of all trees to be retained on site. This barrier shall be clearly identified on site by the attachment of all - weather signs of suitable dimension stating: 'CONSTRUCTION EXCLUSION ZONE - NO ACCESS'. No construction traffic, materials or debris will be permitted within this zone of protection.

Access facilitation pruning. If it is deemed appropriate to trim back retained trees to provide adequate access to approved construction works, all such tree works should be undertaken by a competent and suitably qualified tree surgeon. Such works shall remedy any tree related conflict with proposed structures or access in a way that ensure that not less than 70% of live buds are retained within the tree canopy. The aim of the tree works shall be to retain the general form of the tree by a combination of crown thinning, reduction of end weight and the re-forming of the trees crown to create a pleasing and balanced crown. No branch, limb of trunk greater than 100mm diameter shall be cut in the process of reducing end weight.

Demolition within the zone of protection. If it is deemed necessary to carry out demolition works within a construction exclusion zone surrounding retained trees, for example to remove existing paths or kerbs, only pedestrian operated plant or low ground pressure plant that is less than 2 tonnes gross weight fully loaded shall be permitted. Such plant shall only be operated on existing hard surfaces, or where temporary surfaces have been established. No excavations within the root protection zone of these retained trees shall be permitted, except only under supervision, with the use of an air spade or by careful use of hand tools in a way that retains, without damage, all exposed roots with a diameter greater than 25mm.



Scaffolding within zone of protection. Where scaffolding is to be established within the 'zone of protection' surrounding retained trees, the existing undisturbed ground surface shall be protected by a layer of sharp sand, approx 50mm thick, overlaid with a geotextile membrane. Stout planks, such as closely side butted scaffold boards, will be laid over the geotextile membrane and scaffolding will be constructed on these planks with additional stays as directed by a competent person. Adequate protection fencing as illustrated in Fig 29 & Fig 30 will be maintained between scaffolding and adjacent trees.

Construction of hard surfaces close to retained trees. Where permanent surfaces are to be constructed close to retained trees, within the zone of protection as defined by BS 5837 : 2012, carefully remove accumulated organic material and loose soil, leaving existing topsoil in situ. Protect the root zone with a layer of sharp sand and geotextile membrane and a three-dimensional cell product as defined by a competent Civil or Structural Engineer. Construct the paved area on this sub-base using established design guidelines and a no fines granular material with a porous surface finish such as pavers or porous bitmac

Alterations of levels on lands adjoining construction exclusion zones. Where it is deemed appropriate to lower ground levels on land adjoining a root protection zone established around a retained tree, all excavations and the subsequent construction supporting structures shall be managed in a way that excludes access by construction traffic to the construction exclusion zone. Where such alterations result in the lowering of existing surfaces, the existing ground water environment within the root protection zone shall be maintained by the insertion of a root barrier behind proposed supporting structures. This shall consist of a non-porous barrier carefully inserted in a way that maintains the existing soil moisture regime surrounding the retained tree. Where alterations result in the raising of levels, these shall be designed and detailed by a competent Civil or Structural Engineer to ensure no alterations to ground conditions within the root protection zones.

Landscaping within the root protection zone. If it is deemed necessary to carry out landscaping, planting or re-instatement works within a construction exclusion zone surrounding retained trees, only pedestrian operated plant, or low ground pressure plant that is less than 2 tonnes gross weight fully loaded, shall be permitted. Such works should be supervised by a competent Horticulturalist and be timed and designed to ensure that no soil compaction occurs. No excavations within the root protection zone of these trees shall be permitted, except under supervision using an air spade or by careful use of hand tools in a way that retains, without damage, all exposed roots with a diameter greater than 25mm

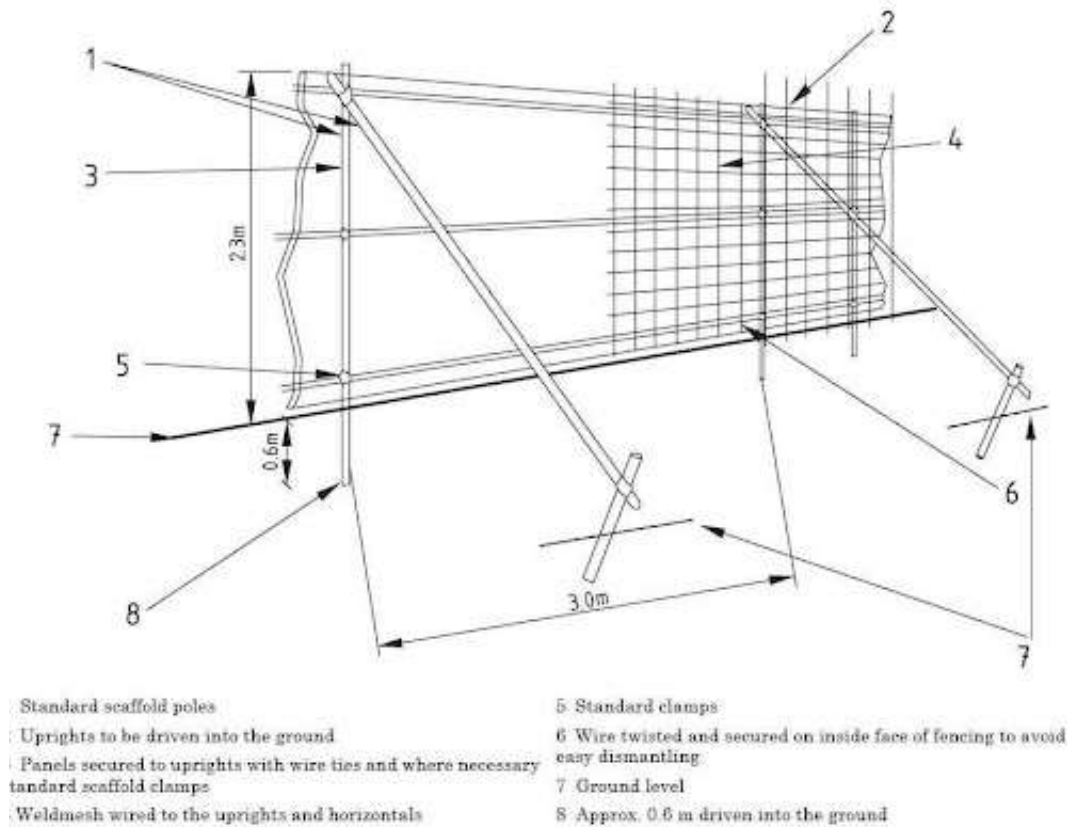


Fig 29 : Tree Protective Barrier

The protective barrier will be appropriate to the degree and proximity of likely construction works. The default specification of BS 5837 : 2012 recommends a vertical and horizontal, scaffold framework, well braced to resist impacts, with vertical tubes at no more than 3m intervals. These should be driven into the ground. Weld mesh panels should be affixed to this framework with scaffold clamps – see Fig 29 & Fig 30. Heras fencing is a reliable option or a similar structure of sturdy, wooden construction would be acceptable. It should typically comprise of the following :



BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems

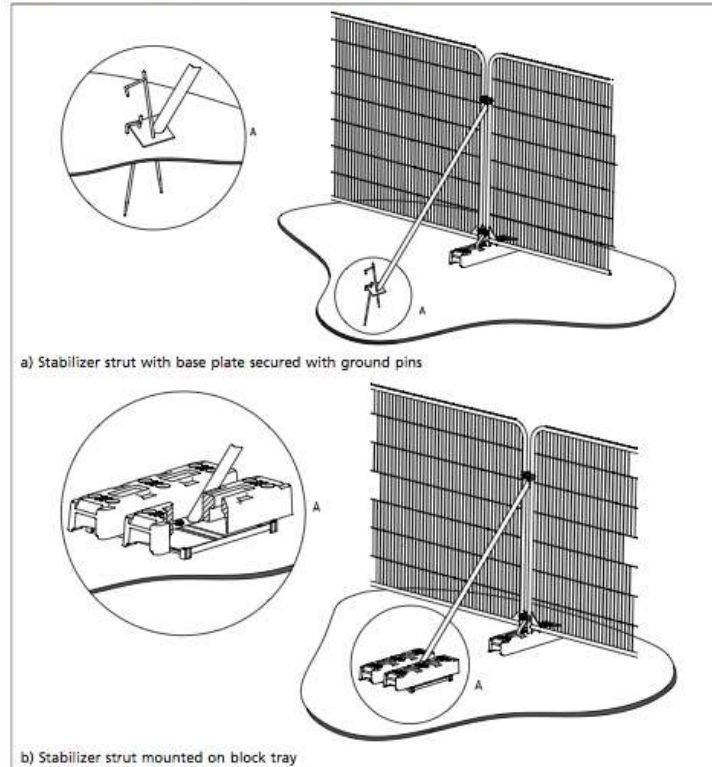


Fig 30

- Temporary protective fencing panels should be weldmesh Heras panels of at least 2.0m in height
- The panels shall stand on rubber or concrete feet
- The panels shall butt together and be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence
- The panels shall be supported on the inner side by stabiliser struts, which shall be clamped to the scaffold framework at a 45° angle and extended back into the Construction Exclusion Zone and shall be attached to a base plate, which shall be secured to the ground with pins
- No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts
- A 600mm x 300mm warning sign reading 'Construction Exclusion Zone Keep Out' shall be fixed to every 10.0 metre length of protection fencing
- On completion of erection, and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the Consulting Arboriculturist shall inspect the Temporary Protective Fencing

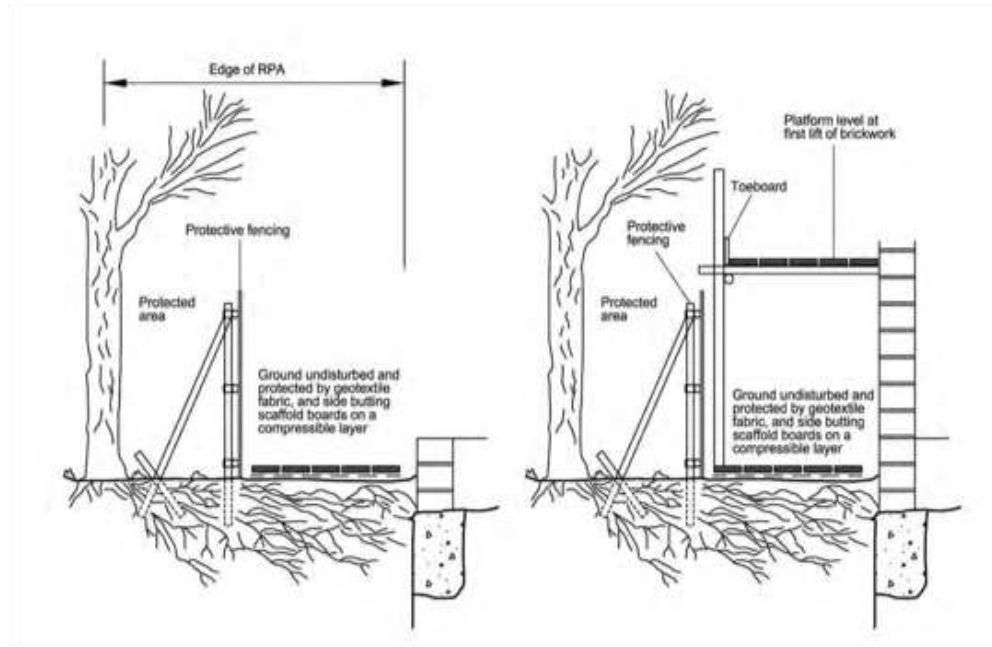


Fig 31

Temporary surfaces within zone of protection. Where temporary access is to be established within the 'zone of protection' surrounding retained trees, ground surfaces will be protected by a layer of sharp sand, approx. 50mm thick, overlaid with a geotextile membrane on which temporary surface of no fines granular material (compression resistant for example woodchip) at least 150mm thick is laid. Where traffic is turning on this surface, stout planks will be laid over the geotextile membrane and below the granular material.

Arboricultural Method Statement

Roadway/Driveway

If the case arises whereby a driveway or roadway has to be moved or situated within the RPA of a tree then any proposal for new surfacing within the RPA must be able to demonstrate a minimal impact on soil structure and roots and this includes the ability for movement of water and air in and out of the soil. The use of no-dig cellular confinement systems using porous sub-base and finished surface materials can be acceptable in some circumstances.

Hand dig exploratory holes is suggested to try and locate feeder roots and or determine how much of a root system exists.

Services

If it is unavoidable for new services to be installed in the RPA, conventional excavation techniques are unacceptable. Trenchless installation should be the preferred option but if that's not feasible, any excavation is likely to have to be carried out by hand or by using a compressed air lance under arboricultural supervision. The methodology used must comply with *NJUG Volume 4 : Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*.

Plant/Machinery

Piling rigs, cranes and other high and wide plant and machinery have the potential to damage trees and site operations must be planned to take account of retained trees in advance of any potential conflict. Proposed locations and routes on and off the site should be supplied to the project arboriculturist.

Contamination

Accidental spillage of any materials which could cause damage to a tree even if outside of an RPA, including dust.

Barriers and other protection must remain in place until all construction activity is complete and there is no realistic risk of damage to soil surfaces

Fires must be avoided where heat could affect foliage or branches

It is the responsibility of the main contractor or assigned agent to ensure that details regarding tree protection are understood and followed by all site personnel and should be incorporated into site inductions.

The location of site facilities, areas for loading, unloading and storage of materials must be sited to ensure minimal impact on the tree. No discharge of potential contaminants should occur within 10m of any tree on the site or where there is a risk of run off into an RPA

Arboricultural Assessment

Retention Category	A High Value	B Moderate Value	C Low Value	U Removal
Quantity	0	0	1	12

Fig 32

Fig 32 is a table that represents the quantity of trees surveyed within the retention categories :

Tree Species

The trees surveyed are all located within the hedges. There are three hedges. One on either side (East & West) of a laneway that links two other laneways that run at 90° to it. Another hedge is located West of the main survey. These hedges are then subdivided into 9 sections to help with identification.

The hedges surveyed contained multiple elm trees (*Ulmus glabra*) of varying ages. For the most part the elms were young with many being saplings. The other species of medium sized tree species were sycamore 5no.(*Acer pseudoplatanus*), ash 7no. (*Fraxinus excelsior*) and Lime 1no.(*Tilia cordata*), twelve of which are recommended to be removed.

Hedgerows

The hedgerows were not connected at either end to any other hedgerow and therefore scored low in Habitat Connectivity (0). On the South end of hedge 1 & 5 and the North end of hedge 4 & 8 there are dense sections of bramble (*Rubus sp*) and bracken (*Pteridium aquilinum*) which are not of arboricultural importance. Towards the centre sections of hedges 2, 3, 6 & 7 blackthorn (*Prunus spinosa*) is beginning to come through as a strong understorey tree. Hawthorn is also beginning to emerge. Presently however the understorey is only sparsely populated with these species and a healthy consistent hedgerow of strong understorey small trees is absent. There are sections along which the field layer of bramble, bracken and nettle (*Urtica dioica*) are overgrown and only resembling a hedge by the dense foliage they provide at ground level. The hedges recommended for removal are hedge no 1, 2, 3, 5, 6, 7, 9. These can be seen in Fig 23.



Arboricultural Assessment continued

Tree Removal

The larger elm (*Ulmus glabra*) trees are the predominant species within the hedge and the majority of them are dead or dying. All of the dead elms should be removed for safety reasons. There are two large dead elm trees that were noted to be removed as soon as possible due to the size.

In all there are 12 no. trees recommended for removal. These trees are self-seeded and do not represent species of merit either aesthetically or as an amenity. On the grounds of safety the majority of them are recommended for removal. Carefully chosen species of small to medium size would help to improve the site aesthetically and create features of arboricultural benefit as well as keeping safety a priority.

Summary:

Having surveyed the trees on the site it is my opinion that there are no species that are of any merit aesthetically or culturally. Generally, the trees have been poorly maintained. Being part of a working farm, field boundary trees were coppiced and pollarded over the years and as a result are now of poor form and diseased in some cases. Ash dieback is prevalent on site. It is likely that all of the ash trees will in time succumb to this disease. The site would greatly benefit from a fresh impetus generated by renovation. Diseased trees become a potential hazard relative to targets such as pedestrians, vehicles and buildings. The removal of overgrown hedgerows that are poorly formed and the replacement of diseased trees is conducive to renewing a safe and manageable environment. The re-planting of suitable tree and shrub species can be of great benefit to the landscape and the people within it due to the structure they provide aesthetically and ease of maintenance and management going forward.

If you have any questions please do not hesitate to contact me by telephone, email or post. The details are below.

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