Appendix 12-2 Tree Survey

LAND PLANNING & DESIGN

CUNNANE STRATTON REYNOLDS

TREE SURVEY

Glenamuck Distributor Road Scheme,
Co Dublin.

December 2018

CUNNANE STRATTON REYNOLDS
LAND PLANNING & DESIGN
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CONTENTS

SUMMARY

This report presents a record of those trees existing within or adjacent to the site area that may potentially be impacted by a proposed roads scheme. Trees have been surveyed as individuals or tree groups in accordance with BS 5837 (2012). The survey was undertaken over two dates on 12th April and 26th July by Cunnane Stratton Reynolds arborist;

Keith Mitchell Diploma Arboriculture (Level 4)
Technician Member Arboricultural Association (UK)
Tree Risk Assessment Qualification (International Society of Arboriculture)
MA(Hons) Landscape Architecture
Member of the Irish Landscape Institute
Chartered Member of the Landscape Institute (UK)
Diploma EIA Management

This survey and report are based on the Topographic Survey information contained in drawing;

- Apex Surveys Topographic Survey Dwg No 3320
- DBFL Preliminary Context Plan Dwg No 170172-9010

A full survey record is presented in Appendix 1, together with accompanying drawings Tree Survey Dwg No 18234_T_101, Constraints Dwg No 18234_T_102 and Tree Protection Plan Dwg No 18234_T_103. After introducing the terms of reference and the methodology of the survey, the report summarises the survey findings in an overview of the existing tree cover within the site.

A total of nine tree groups, an additional nine hedgerows and twenty five individual trees were recorded.

Where assessment takes the form of a Tree Group – trees of greatest arboricultural significance or relevance to proposed scheme within these groups may also be identified. Every effort has been made to access all trees for inspection, however in some instances where site conditions and or landownership issues prevent full access, some measurements may be visually estimated.

It is noted that the proposed road alignment encounters a number of established hedgerows and tree groups over a relatively wide geographic area. While partial removal of these hedgerows and tree groups will be necessary to facilitate the proposed road scheme, every effort should be made to safely retain as much of these landscape features as possible by careful protection during the construction stages.

The proposed development will also present an opportunity to implement additional new tree planting, both as part of a general landscape design scheme and also as part of a tree management program aimed at maintaining high quality diverse long-term amenity tree cover, in keeping with the setting and landscape character.

The report concludes with recommendations for protection measures to ensure the conservation of retention trees, hedgerows and tree groups during any development.

1. INTRODUCTION

Terms of Reference

Cunnane Stratton Reynolds (CSR) were instructed by DBFL Consulting Engineers to conduct a tree survey along the alignment of the proposed Glenamuck District Distributor Road Scheme.

CSR undertook a desktop analysis of the proposed route prior to walking the route, (in as far as possible – permission was not granted to enter some lands currently privately owned), and considered those tree and tree groups that might potentially be impacted upon by such a proposed development and produced a subsequent tree survey report presenting our findings, (in accordance with BS 5837:2012), together with recommendations for their best practice management in relation to the proposed development.

This involved a survey of the principal trees / tree groups concerned in accordance with BS 5837 (2012).

Documents supplied to CSR for purposes of conducting a tree survey include:

- Apex Surveys Topographic Survey Dwg No 3320
- DBFL Preliminary Context Plan Dwg No 170172-9010

Site Inspection & Methodology

The site was surveyed on 12th April & 26th July 2018 by a qualified Arborist. A visual inspection from the ground was performed on all existing trees / tree groups on site. Where access allowed, principal individual trees were examined before critical measurements were taken and observations made. (Full access was not always possible due to both land ownership issues and physical constraints – where access was not possible visual estimates were made from distance).

A description was recorded of each tagged tree / group of trees, their species, age class, all relevant measured dimensions (height, stem diameter, crown spread radii and crown clearance height) and an assessment of the tree health / vitality, structural form, life expectancy and quality categorisation. Any recommended remedial works required were outlined. Hedgerows and significant tree groups within/bounding the site are subject to group description and assessment, in accordance with BS 5837 (2012).

The findings of the survey are recorded and presented in this Tree Survey Report and Tree Schedule (Appendix 1).

This report is subject to the scope and limitations as given at the end of the report.

Accompanying Drawings

The tree survey report should be read in conjunction with;

- Tree Survey (Dwg No 18234/T/101).
- Constraints Drawing (Dwg No 18234/T/102).
- Tree Protection Plan (Dwg No 18234/T/103).

A1 size colour coded drawings which accompany this report, (monochrome drawings should not be relied upon). These drawings are based upon the topographical drawings supplied to CSR.

Site Location

The site is located in the Glenamuck District of Dunlaoghaire Rathdown, South County Dublin. The alignment of the proposed distributor road runs through a number of privately owned greenfield areas of land, which are currently used for a primarily agricultural purposes.

2. DESCRIPTION OF EXISTING TREES

2.1 The proposed road alignment runs through a landscape characterised by mixed existing commercial and residential development within a landscape of agricultural pasture land typical of a city fringe. The landscape is generally flat with some local variations in topography.

Figure 1: Low resolution satellite image of approximate proposed road alignment.

Existing trees are to be found primarily as integral components of field boundary hedgerows or small linear tree groups along roadsides.

The proposed road alignment generally avoids direct conflict in so far as possible with existing hedgerows and tree lines by running through the middle of existing fields rather, (also avoiding existing buildings), than parallel to their edges. However, where crossing between fields there is direct conflict with the corresponding portion of the hedgerow or tree line.

A total of nine tree groups, an additional nine hedgerows and twenty five individual trees were recorded.

Their location, size and quality category may be reviewed with reference to the accompanying Tree Survey Dwg No 18232/T/101 and the tree survey (Appendix 1).

2.2 Photographic Summary of Trees Surveyed

Hedgerow 1

Hedgerow 2

Hedgerow 2

Hedgerow 3 (typical section – western end).

Hedgerow 3 (typical section – middle).

Hedgerow 3 (spur to south).

Hedgerow 4

Hedgerow 5

Hedgerow 6

Hedgerow 7

Hedgerow 7

Hedgerow 7 (Right hand side of road)

Tree Group 1

Tree Group 2

T435 (left) & T436 (right)

T437

T438

T439

Hedgerow 7&8 (right) TG2 (left)

Tree Group 3

Tree Group 3

Hedgerow 9

Tree Group 4

T462

T463

T464

Tree Group 5

Tree Group 6 (left) / T461 (right)

Tree Group 7

T443

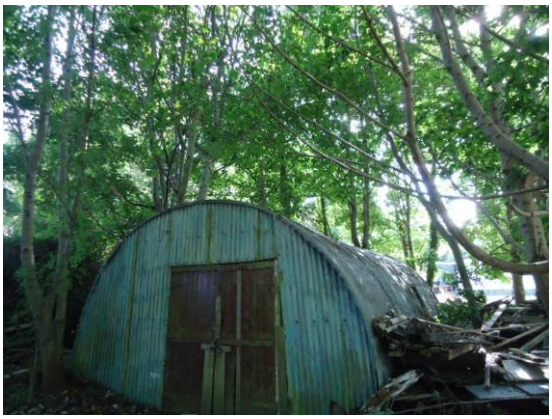
T441- T444 (left to right)

T445-T447 (left to right)

T460 (left) / T461 (right)

Tree Group 8

Tree Group 9



Tree Group 9

T465

T466

2.3 As would be expected across a site of this scale the existing tree quality varies considerably, the majority of trees typically being located in field boundary hedgerows or small tree groups within an agricultural pastureland setting.

Trees usually are considered of greater value as collective groups, than they might be when considered in isolation as individuals – a hedgerow or woodland being generally of significant visual and ecological value. As such it should be noted that the cumulative value of evaluated Tree Groups or Hedgerows often reflects an increased catergorised value than might be awarded to the individual constituent trees if they were assessed in isolation.

This site area is characterised by its field boundary hedgerows, which generally contain a diverse range of native shrub and tree species. Individual trees within these hedgerows are typically relatively young to middle age multi-stem specimens of low to moderate value - however for classification purposes when been considered as integral components of larger hedgerow / tree group they typically have been assigned the higher of these values. Hedgerows containing trees of significant maturity or size are considered of highest value.

There are only a relatively small number of high quality individual trees of significant maturity and size, these are predominantly found along the R117 south of Kilternan.

A mix of species are present, native and naturalised deciduous species are predominant, with Ash and Sycamore most common. The age profile is typically young to middle aged.

Little or no considered arboricultural management interventions appear to have occurred in the past. Many trees exhibit the signs of damage typical of an agricultural setting, where trees have survived ‘unsympathetic’ treatment and or stock damage in the past, e.g. hedgerow trees are typically multi-stemmed and often of relatively poor form, with evidence of previous damage having occurred to stems. There is scope for selective management works to improve the quality of such existing trees, such as the removal of; ivy, weak tree growth, overcrowding regenerative growth, rubbing limbs, deadwood etc.

However, others have survived relatively undisturbed and the majority of trees appear to be in good health. (Most trees are currently heavily obscured by a combination of briars and ivy growth and it would be beneficial to re-inspect when ivy has been removed to get a fuller picture).

The tree cover present within the site is located primarily along the field boundaries, reflective of their former pastureland setting which has over the years seen increasing levels of development.

The existing trees and hedgerows make a very positive contribution to the surrounding landscape setting and form an integral part of the landscape. In addition, they provide a high ecological habitat value and effective visual screening.

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 This section discusses the potential impact of the proposed development on the existing tree cover on site and considers the need for mitigation measures, in accordance with BS 5837 (2012), for sustainable development.

The proposed road alignment generally avoids direct conflict with trees in as afar as possible, but inevitably comes into direct conflict where it is required to cross tree or hedgerow defined boundaries.

3.2 Category 'U' trees are recommended for immediate removal (felling) on general management grounds, irrespective of site development. One tree (T443, part of Tree Group 7) is assigned to category 'U'.

Direct Loss of Trees

3.3 The following trees are in direct conflict with the proposed development and are therefore proposed for removal;

Hedgerow 2 – a portion of (approx. 45 linear metres) of this hedgerow will require to be removed to facilitate the passage of the proposed road, it is of moderate value with no trees of high value.

Hedgerow 3 – a side section/spur (approx. 100 linear metres) of this hedgerow will require to be removed to facilitate the passage of the proposed road and attenuation area, it is of moderate value with no trees of high value.

Hedgerow 5 – two portions of (approx. 65 & 80 linear metres) of this hedgerow will require to be removed to facilitate the passage of the proposed road, it is of moderate value with no trees of high value.

Hedgerow 6 – a portion of (approx. 60 linear metres) of this hedgerow will require to be removed to facilitate the passage of the proposed road, it is of moderate value with no trees of high value.

Hedgerow 7 – most of this hedgerow will require to be removed to facilitate the passage of the proposed road, it is of moderate value, (though the northern most portion consists of low value Leylandii species), with no trees of high value.

Hedgerow 8 – the entirety of this hedgerow will require to be removed to facilitate the passage of the proposed road and associated earthworks, it is of moderate value, with no trees of high value.

Hedgerow 9 – a portion of (approx. 30 linear metres) of this hedgerow will require to be removed to facilitate the passage of the proposed road, it is of low value with no trees of high value.

Tree Group 2 – all of this tree group is in direct conflict with the proposed road / roundabout alignment and will require to be removed. It is of moderate value.

Tree Group 3 – most of this tree group (approx. 145 linear metres) is in direct conflict with the proposed road alignment / pond location and will require to be removed. The group is cumulatively of high value, composed of moderate value individual trees.

Tree Group 4 –the western most portion (approx. 30 linear metres) of this tree group is in direct conflict with the proposed road alignment and will require to be removed. It is of moderate value.

Tree Group 5 – a portion of this tree group (approx. 20 linear metres in the center is in direct conflict with the proposed road alignment and will require to be removed. It is collectively of high value composed of moderate value individual trees.

Tree Group 6 – all of this small tree group is in direct conflict with the proposed road alignment and will require to be removed. It is of moderate value.

Tree Group 7 – a portion of this tree group (approx. 135 linear metres) is in direct conflict with the proposed road alignment and will require to be removed. It is cumulatively of high value composed of a mix of moderate and high value trees, however the portion in conflict contains only two high class individual trees.

Tree Group 8 – a 40m wide corridor representing approximately half of this tree group is in direct conflict with the proposed road alignment and will require to be removed. This group is largely composed of scrub with occasional trees and it is of moderate value.

Tree Group 9 – a 35m wide corridor representing approximately a third of this tree group is in direct conflict with the proposed road alignment and will require to be removed. This group is of moderate value.

Individual trees in direct conflict;

B Class (Moderate Value) T448 / T449 / T450 / T452 / T453 / T454 / T464

C Class (Low Value) T451/ T463

Indirect Impacts

3.4 Cognisance must also be given to indirect impacts - in particular care must be taken to ensure the proposed development and ancillary works do not represent an unacceptable conflict with the 'Root Protection Area' of the existing trees / hedgerows - as illustrated in Constraints Dwg No 18234/T/102.

Disturbance of 'Root Protection Area' may just as readily kill or destabilise a tree over time, by means of root damage/severance and or earth compaction/covering preventing essential transfer of water and air to roots.

T466 should be monitored on site by arborist during construction and a non-dig road construction for private driveway such as cellweb used if required.

Provided proper tree protection measures are adhered to, it is not anticipated that any further trees will require removal due to indirect impacts.

Additional Loss of Trees – Considerations

3.5 T443 is a U Class tree which will require to be removed or reduced to a safe height and left as a monolith to decay safely offering important habitat value.

Summary of Trees to be Removed

3.6 The following hedgerows, trees and tree groups are proposed for removal;

Hedgerow 2 (partial removal – approx. 45m)
Hedgerow 3 (partial removal – approx. 100m)
Hedgerow 5 (partial removal – approx. 65m & 80m)
Hedgerow 6 (partial removal – approx. 60m)
Hedgerow 7 (almost full removal)
Hedgerow 8 (full removal)
Hedgerow 9 (partial removal – approx. 30m)
Tree 448
Tree 449
Tree 450
Tree 451
Tree 452
Tree 453
Tree 454
Tree 463
Tree 464
Tree Group 2 (full removal)
Tree Group 3 (almost full removal – approx. 145m)
Tree Group 4 (partial removal – approx. 30m)
Tree Group 5 (partial removal – approx. 20m)
Tree Group 6 (full removal)
Tree Group 7 (partial removal – approx. 135m)
Tree Group 8 (partial removal – approx. 40m)
Tree Group 9 (partial removal – approx. 30m)

Tree Protection

3.7 Adequate protection and so successful retention of those trees to be retained within the land take area, (including those not individually surveyed), will be achieved by rigidly excluding all construction activities from tree root protection areas by fit for purpose barriers/fencing and/or additional ground protection.

3.8 Tree Protection Areas (TPAs) are proposed, as indicated on accompanying Tree Protection Plan (Dwg No 18234_T_103). Protective fence line locations and details for these areas are also indicated on the plan.

Services

3.9 Services that are planned as part of this project must also avoid designated ‘Root Protection Area’ of tree / tree groups for retention.

4. RECOMMENDATIONS – Arboricultural Method Statement

Recommendations for the specific measures advised regarding management of the trees in relation to this development are detailed within Appendix 1. These recommendations should inform, and be referred to in, the method statements submitted for approval prior to commencement by the responsible building/engineering and landscape contractors whose works (subject to grant of permission) will affect retained trees and the Tree Protection Areas.

1. *Tree Works.*

Subject to the required permissions removal / felling works as specified on Dwg No No18234_T_103, should be performed prior to project commencement, by reputable contractors in accordance with BS 3998:2010 and current best practice. Removal of scrub vegetation and ivy clearance should preferably be performed in winter outside of the bird nesting season. Tree felling should be preceded by a competent assessment as to the presence of any protected wildlife species, where required specialist advice should be sought if necessary.

2. *Protective Fencing.*

Following above permitted, priority tree works, protective fencing (barriers) should be erected in the positions and alignments as indicated on the Tree Protection Plan (Dwg No No18234_T_103). Fencing should be in accordance with BS 5837:2012 unless otherwise agreed with the planning authority. Commencement of development should not be permitted without adequate protective fencing being in place. This fencing, enclosing the minimum tree protection areas indicated, must be installed prior to any plant, vehicle or machinery access on site. Fencing should be signed 'Tree Protection Area – No Construction Access'. Fencing is not to be taken down or re-positioned without written approval of the project Arborist. No excavation, plant or vehicle movement, materials handling or soil storage is to be permitted within the fenced tree protection areas indicated on plan.

3. Boundary Treatments

Landscape works and installation of / work to boundary treatments within the Root Protection Area should be undertaken to a specification and method statement in accordance with BS 5837: 2012 - submitted for approval prior to commencement of works, under the supervision of an Arborist and / or Landscape Architect.

4. Landscape Works

Proposed landscaping works including new planting, shall be performed in accordance with BS 5837:2012. During these works, the ground around retained trees must not compacted by vehicles, nor be mechanically excavated for planting, nor be significantly altered in terms of ground levels.

5. Monitoring & Compliance

A number of potentially critical future works in proximity to retained trees are potentially to be undertaken in association with the development of this greenfield site, these should be done in accordance with approved method statements and under direct supervision by a qualified consultant Arborist. Therefore, during the development, a professionally qualified Arborist is recommended to be retained as required by the principal contractor or developer to monitor and advise on any works within the RPA of retained trees to ensure successful tree retention and planning compliance.

It is advised that tree protection fencing, any required special engineering and supervision works etc must be included / itemised in the main contractor tender document, including responsibility for the installation, costs and maintenance of tree protection measures throughout all construction phases.

Copies of the Tree Survey and all accompanying drawings, a copy of BS 5837:2012 and NJUG 4 (2007)*'Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees'* should all be kept available on site by the contractor during development. All works are to be in accordance with these documents.

It is advised that all retained trees be subject to expert re-inspection within 12 months and/or prior to completion of development and public occupancy/access of the site.

Limitations and Scope of this Survey Report

This report covers only those trees individually inspected, (shown on the 'Tree Survey Drawings' and described in the 'Schedule'), reflecting the condition of those trees at the time of inspection. Inspection is limited to visual examination of the subject trees from the ground without; test boring, use of tomographic equipment, dissection, probing, coring, ivy removal or excavation to establish structural integrity.

The trees were not climbed and dimensions are approximate, but considered a reasonable reflection of the trees measurements. A number of trees were visually obscured by heavy ivy growth and or surrounding vegetation, which could potentially hide from view existing faults or weaknesses, as such they would benefit from re-inspection upon removal of ivy growth. This survey can only therefore be regarded as a preliminary assessment.

There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future. The currency of this survey report and its recommendations is one year.

The accompanying drawings are illustrative and based on the land (topographical) survey supplied; CSR Ltd accept no legal liability or responsibility for any errors in the information contained in the supplied drawings.

CSR Ltd accept no responsibility for the performance of trees subject to pruning or other site works (including construction activities) not performed in strict accordance with recommendations as specified in this report and/or in accordance with BS 3998:2010 and BS 5837:2012

All retained trees mentioned in this report should be subject to expert re-inspection within 12 months and prior to completion of development works and public occupancy of the site.

This report was produced as a part of a planning application for the scheme; the author accepts no responsibility or liability for actions taken by reason of this report by the client or their agents unless subsequent contractual arrangements are agreed. Public disclosure or submission of any part of this report without title, or permission from the author, renders this report invalid and legally inadmissible.

References/Bibliography

BS 5837 (2012). *Trees in Relation to Design, Demolition and Construction - Recommendations*. British Standards Institution. TSO, London.

BS 3998 (2010) *Tree Work - Recommendations*. British Standards Institution. TSO, London.

NJUG 4 (2007) *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2).* National Joint Utilities Group.

APPENDIX 1

TREE SURVEY KEY

Information in the attached schedule is given under the following headings:

Tree No.

Individual trees have been numbered and tagged on site with corresponding survey tag or treated as a group where appropriate (e.g. Woodlands/hedgerows) and illustrated on accompanying tree survey drawing.

Species

Common & Latin names of species are provided

Height

Overall estimated height given in meters (measured using Truplus 200 Laser Rangefinder).

Stem Diameter

The diameter of the main trunk taken at a height of 1.5m on a single stem tree, or, on each branch of multi-stemmed (MS) trees.

Crown Spread

The largest radius of branch spread is provided in meters for North / East / South and West directions.

Height of lowest branch

The distance between ground level and first significant branch or canopy (and direction of growth) given in meters (m).

Any measurement or dimension that has been estimated (for offsite or otherwise inaccessible trees where accurate data cannot be recovered) is identified by the suffix #.

Life stage

The tree's age is defined as:

Y = Young, in first third of life (tree which has been planted in the last 10 years or is less than 1/3 the expected height of the species in question).

MA = Middle Age, in second third of life (tree, which is between a 1/3 and 2/3's the expected height of the species in question).

M = Mature, in final third of life (tree that has reached the expected height of the species in question, but still increasing in size).

OM = Over mature (tree at the end of its life cycle and the crown is starting to break up and decrease in size).

V = Veteran Tree (exceptionally old tree).

Physiological Condition

The tree's physiological condition is defined as:

Good -Good vitality: normal bud growth, leaf size, crown density and wound closure

Fair - Average to below average vitality: reduced bud growth, smaller leaf size, lower crown density and reduced wound closure

Poor - Low vitality: limited bud growth, small chlorotic leaves, sparse crown, poor wound closure

Dead - No longer living.

Structural Condition

The trees structural condition is defined as:

Good - No major structural defects observed (possibly some minor defects)

Fair - Minor defects present, (such as bark wounds, isolated decay pockets or structure affected due to overcrowding), that could be alleviated by tree surgery/management

Poor - Major structural defects present such as extensive deadwood, decay or defective to the point of being dangerous. (Significant defects are noted e.g. decay, collapsing etc).

Preliminary Management Recommendations & Timescale

Recommendations actions based on limitations of survey – (may include further investigation and or assessment of suspected defects by means and or methods not undertaken / within the remit of this survey).

Estimated Remaining contribution (Years)

Life of the tree is given as;

10 < less than 10 years remaining
10 + in excess of 10 years remaining
20 + in excess of 20 years remaining
40 + in excess of 40 years remaining

Tree Quality Assessment Category

U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal

of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)

• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline

• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality

(NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve).

A High quality

Trees of high quality with an estimated remaining life expectancy of at least 40 years

A1 Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)

A2 Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features

A3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)

B Moderate quality

Those trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

B1 Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.

B2 Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.

B3 Trees with material conservation or other cultural value

C Low quality

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.

C1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.

C2 Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.

C3 Trees with no material conservation or other cultural value

Tag	Species	Height (m)	Crown Spread (m) N/S/E/W	Girth (mm)@ 1.5m	RPA circle radius (m)	Ht of lowest branch (m) & direction of growth	Life Stage	Estimated remaining contribution (years)	PhysiologIcal Condition	Structural Condition	Preliminary management recommendations	Category of retention + sub-category	Notes
435	Betula pendula 'Youngii'	4	1/1/2/1	300	3.60	2m all	MA	20+	Good	Fair		B1	
436	Acer platanoides 'Crimson King'	7	2/2/2/2	400x2	6.80	1m e/w	MA	40+	Good	Fair		B1	
437	Fraxinus exclesior	9	3/3/4/2	450	5.40	3m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	
438	Acer pseudoplatanus	8	2/2/2/2	300x2	5.01	2m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	
439	Tilia cordata	9	3/3/3/3	450	5.40	2m all	MA	40+	Good	Good	Remove Ivy	B1	
440	Fraxinus exclesior	10	4/4/4/4	300x2	5.01	1m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	
441	Acer pseudoplatanus	17	5/5/4/6	1000	12.00	3m all	MA	40+	Good	Fair	Remove Ivy	B1	heavily obscured
442	Acer pseudoplatanus	23	7/7/7/7	1100	13.20	4m all	MA	40+	Good	Fair	Remove Ivy	A1	heavily obscured
443	Acer pseudoplatanus	13	3/3/3/3	1100	13.20	3m e	MA	10<	Poor	Poor	Fell or monolith	U	large decay cavity
444	Fagus sylvatica	24	7/7/7/7	1100	13.20	3m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	A1	heavily obscured
445	Fagus sylvatica	24	8/8/8/8	1200	14.40	3m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	A1	heavily obscured
446	Acer pseudoplatanus	16	5/5/5/5	900	10.80	2m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
447	Acer pseudoplatanus	20	6/6/6/6	1100	13.20	2m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	A1	heavily obscured
448	Acer pseudoplatanus	18	5/5/7/5	950	11.40	3m all	MA	40+	Fair	Fair	Remove Ivy & Crown Clean	B1	fungal bracket 6m north
449	Acer pseudoplatanus	15	5/5/5/5	1000	12.00	2m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
450	Acer pseudoplatanus	15	6/6/7/5	900	10.80	3m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
451	Aesculus hippocastanum	8	3/3/3/3	1200	14.40	2m all	MA	20+	Fair	Fair		B1	monolith regrowth
452	Acer pseudoplatanus	15	5/5/5/5	900	10.80	3m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
453	Pinus sylvestris	18	2/3/2/2	500	6.00	15m all	MA	40+	Fair	Fair	Remove Ivy	B1	heavily obscured
454	Pinus sylvestris	18	2/3/2/2	500	6.00	15m all	MA	40+	Fair	Fair	Remove Ivy	B1	heavily obscured
455	Acer pseudoplatanus	15	4/4/4/4	350*5	9.38	1m all	MA	40+	Good	Poor	Remove Ivy & Crown Clean	B1	heavily obscured
456	Acer pseudoplatanus	15	4/4/4/4	450	5.40	2m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
457	Pinus sylvestris	22	5/5/5/5	800	9.60	15m all	MA	40+	Good	Good	Remove Ivy	A1	
458	Pinus sylvestris	21	4/4/4/4	800	9.60	13m all	MA	40+	Good	Good	Remove Ivy	A1	
459	Fagus sylvatica	19	6/6/6/6	1000	12.00	2m all	MA	40+	Fair	Fair	Remove Ivy & Crown Clean	A1	heavily obscured

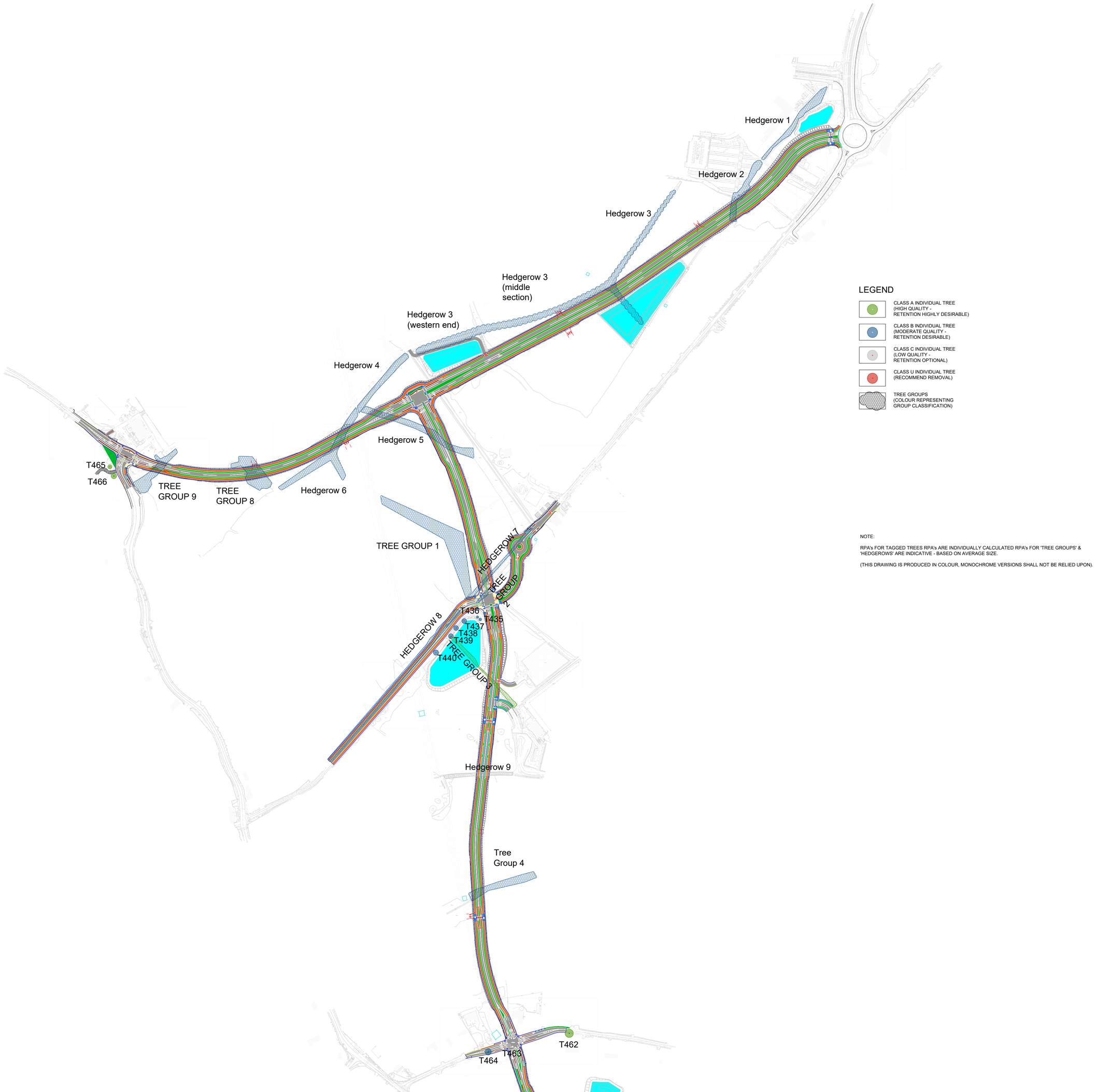
Hedgerows

	Description	RPA	Classification
H1	Mixed native species hedgerow – Crataegus monogyna / Prunus spinosa / Rubus fruticosus / Hedera helix with occasional young to middle age Ash (Fraxinus excelsior) trees of low to moderate quality as individuals.	3m from edge	B2
H2	Mixed native species hedgerow – Crataegus monogyna / Prunus spinosa / Rubus fruticosus / Hedera helix with intermittent young to middle age Ash (Fraxinus excelsior) trees of low to moderate quality as individuals.	4m from edge	B2
H3	Mixed native species hedgerow – Crataegus monogyna / Prunus spinosa / Corylus avellana / Sambucus nigra / Ilex aquifolium / Rubus fruticosus / Salix sp. / Hedera helix with intermittent of young to middle age Ash (Fraxinus excelsior) trees of low to moderate quality as individuals.	3m from edge	B2
H4	Mixed native species hedgerow – Crataegus monogyna / Prunus spinosa / Corylus avellana / Sambucus nigra / Ilex aquifolium / Rubus fruticosus / Salix sp. / Hedera helix / Prunus avium with frequent young to middle age Ash (Fraxinus excelsior) and Sycamore (Acer psuedoplatanus) trees of low to moderate quality as individuals.	4m from edge	B2

H5	Mixed native species hedgerow – Crataegus monogyna / Prunus spinosa / Corylus avellana / Sambucus nigra / Ilex aquifolium / Rubus fruticosus / Salix sp. / Hedera helix / Prunus avium with frequent young to middle age Ash (Fraxinus excelsior) and Sycamore (Acer psuedoplatanus) trees of low to moderate quality as individuals.	4m from edge	B2
H6	Mixed native species hedgerow – Crataegus monogyna / Prunus spinosa / Corylus avellana / Sambucus nigra / Ilex aquifolium / Rubus fruticosus / Salix sp. / Hedera helix / Prunus avium with frequent young to middle age Ash (Fraxinus excelsior) and Sycamore (Acer psuedoplatanus) trees of low to moderate quality as individuals.	4m from edge	B2
H7	Roadside mixed species native hedgerow primarily Crataegus monogyna / Prunus spinosa / Rubus fruticosus / Hedera helix with section of non native Leylandii – occasional young to middle age Ash (Fraxinus excelsior) and Sycamore (Acer psuedoplatanus) tree of low to moderate quality as individuals.	2m from edge	B2
H8	Roadside mixed species native hedgerow primarily Crataegus monogyna / Prunus spinosa / Rubus fruticosus / Hedera helix with regular young to middle age Ash (Fraxinus excelsior) and Sycamore (Acer psuedoplatanus) tree of low to moderate quality as individuals.	5m from edge	B2
H9	Crataegus monogyna / Rubus fruticosus hedgerow maintained to approx. 1.2m height.	2m from edge	C2

Tree Groups

	Description	**RPA**	**Classification**
TG1	Mixed group of young to middle age ornamental & native deciduous and evergreen species including Populus nigra / Larix decidua / Corylus avellana / Fraxinus excelsior / Fagus sylvatica / Quercus robur providing as shelter / screen to private property.	5m from outer edge	B2
TG2	Roadside avenue of middle age Ash (Fraxinus excelsior) of generally moderate quality though often poor in form.	5m from outer edge	B2
TG3	Roadside avenue of middle age predominantly Ash (Fraxinus excelsior) with some Sycamore (Acer psuedoplatanus) of generally moderate quality though often poor in form.	5m from outer edge	
TG4	Woodland belt of mixed deciduous species predominantly Ash (Fraxinus excelsior) and Sycamore (Acer psuedoplatanus)	5m from outer edge	B2
TG5	Mixed group of well formed staggered row of middle age Ash (Fraxinus excelsior) & Sycamore (Acer psuedoplatanus) growing along stream bank.	5m from outer edge	A2
TG6	Small group of young to middle age Ash (Fraxinus Excelsior), Sycamore (Acer pseudoplatanus) and Holly (Ilex aquifolium).	5m from outer edge	B2
TG7	Roadside avenue of high quality middle age to mature trees including Ash (Fraxinus Excelsior), Sycamore (Acer pseudoplatanus), Beech (Fagus sylvatica) generally of variable form but significant maturity. One U Class tree with significant decay cavity.	5m from outer edge	A2
TG8	Mixed group of predominantly Willow (Salix sp.) scrub with occasional middle age native deciduous field trees primarily Ash (Fraxinus excelsior), Sycamore (Acer pseudoplatanus) of moderate quality.	5m from outer edge	B2
TG9	Mixed group of middle age native deciduous trees primarily Sycamore (Acer pseudoplatanus) of moderate quality.	5m from outer edge	B2



LEGEND

- CLASS A INDIVIDUAL TREE (HIGH QUALITY - RETENTION HIGHLY DESIRABLE)
- CLASS B INDIVIDUAL TREE (MODERATE QUALITY - RETENTION DESIRABLE)
- CLASS C INDIVIDUAL TREE (LOW QUALITY - RETENTION OPTIONAL)
- CLASS U INDIVIDUAL TREE (RECOMMEND REMOVAL)
- TREE GROUPS (COLOUR REPRESENTING GROUP CLASSIFICATION)

NOTE:

RPA's FOR TAGGED TREES RPA's ARE INDIVIDUALLY CALCULATED RPA's FOR 'TREE GROUPS' & 'HEDGEROWS' ARE INDICATIVE - BASED ON AVERAGE SIZE.

(THIS DRAWING IS PRODUCED IN COLOUR, MONOCHROME VERSIONS SHALL NOT BE RELIED UPON).

REV	DATE	AMENDMENT
A	DEC 18	UPDATED ROAD ALIGNMENT

CUNNANE STRATTON REYNOLDS

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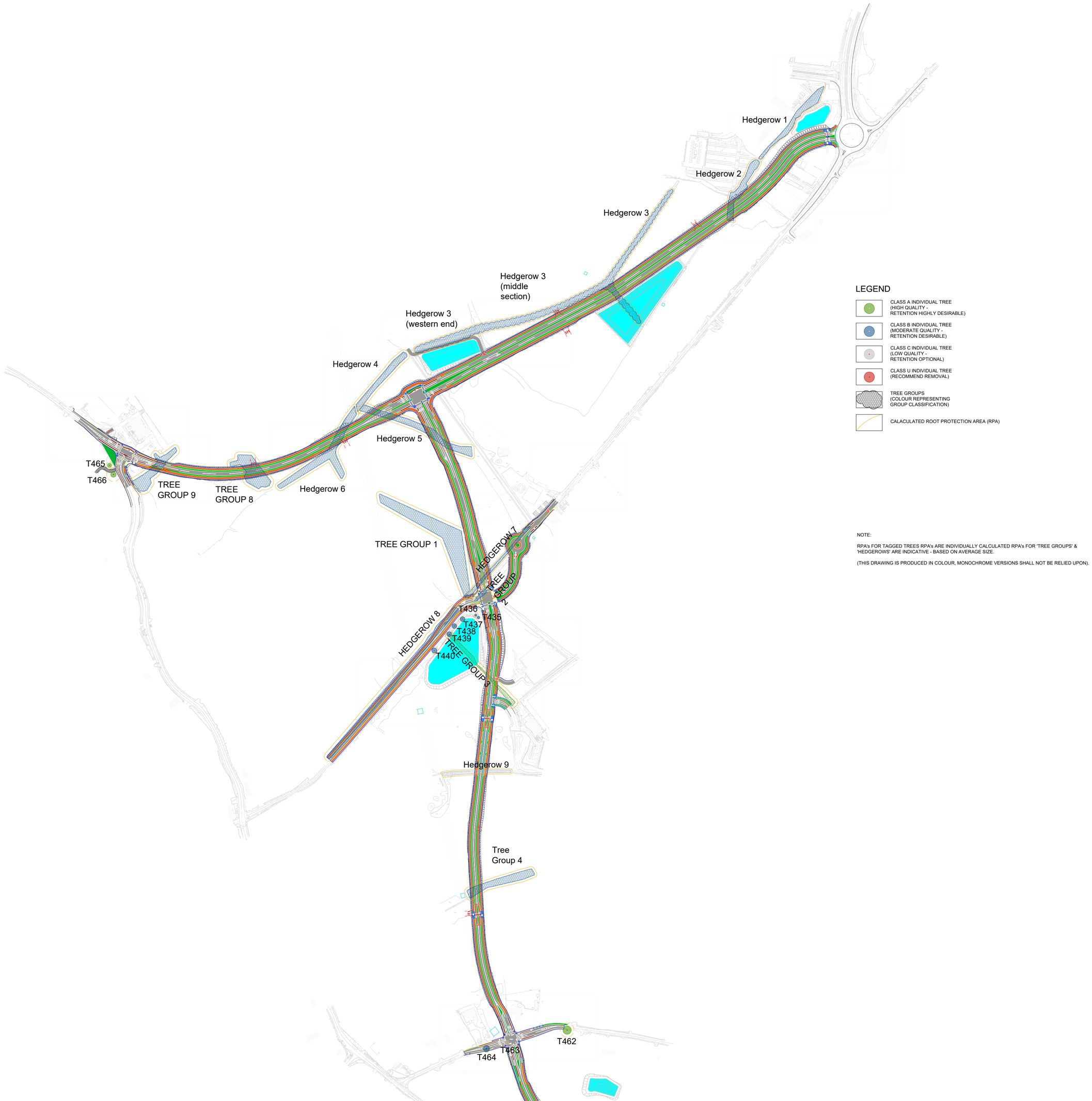
PROJECT: **GLENAMUCK DISTRICT DISTRIBUTOR ROAD SCHEME, CO. DUBLIN.**	DATE: DECEMBER 2018
	SCALE: 1:4000 @ A1
	DRAWN: INIT CHECKED: KM
DRAWING: **TREE CLASSIFICATION**	DRAWING NO: **18234-T-101**



LEGEND

- CLASS A INDIVIDUAL TREE (HIGH QUALITY - RETENTION HIGHLY DESIRABLE)
- CLASS B INDIVIDUAL TREE (MODERATE QUALITY - RETENTION DESIRABLE)
- CLASS C INDIVIDUAL TREE (LOW QUALITY - RETENTION OPTIONAL)
- CLASS U INDIVIDUAL TREE (RECOMMEND REMOVAL)
- TREE GROUPS (COLOUR REPRESENTING GROUP CLASSIFICATION)
- CALACULATED ROOT PROTECTION AREA (RPA)

NOTE:

RPA's FOR TAGGED TREES RPA's ARE INDIVIDUALLY CALCULATED RPA's FOR 'TREE GROUPS' & 'HEDGEROWS' ARE INDICATIVE - BASED ON AVERAGE SIZE.

(THIS DRAWING IS PRODUCED IN COLOUR, MONOCHROME VERSIONS SHALL NOT BE RELIED UPON).

REV	DATE	AMENDMENT
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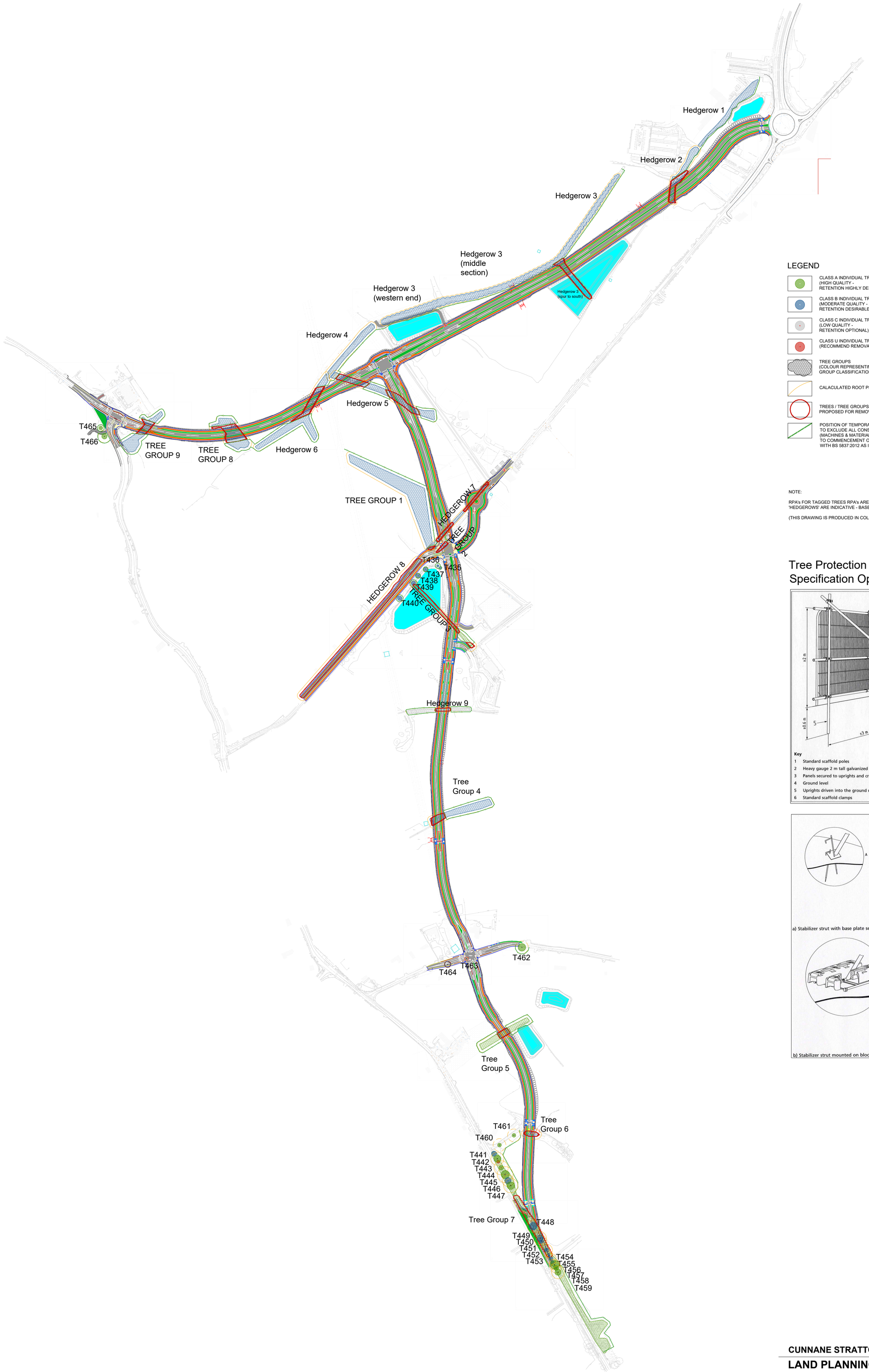
PROJECT: **GLENAMUCK DISTRICT DISTRIBUTOR ROAD SCHEME, CO. DUBLIN.**	DATE: DECEMBER 2018
	SCALE: 1:4000 @ A1
	DRAWN: INIT CHECKED: KM
DRAWING: **TREE CONSTRAINTS**	DRAWING NO: **18234-T-102**



LEGEND

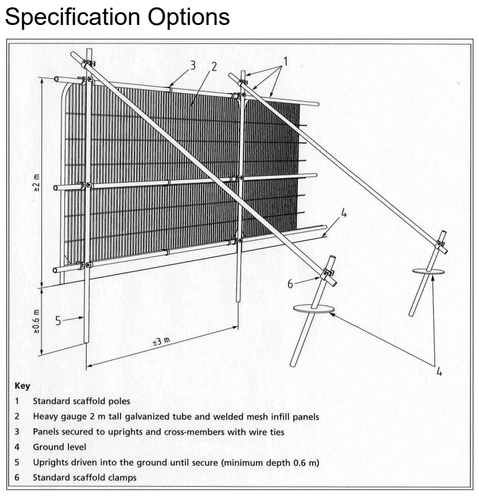
- CLASS A INDIVIDUAL TREE (HIGH QUALITY - RETENTION HIGHLY DESIRABLE)
- CLASS B INDIVIDUAL TREE (MODERATE QUALITY - RETENTION DESIRABLE)
- CLASS C INDIVIDUAL TREE (LOW QUALITY - RETENTION OPTIONAL)
- CLASS U INDIVIDUAL TREE (RECOMMEND REMOVAL)
- TREE GROUPS (COLOUR REPRESENTING GROUP CLASSIFICATION)
- CALACULATED ROOT PROTECTION AREA (RPA)
- TREES / TREE GROUPS / HEDGEROWS PROPOSED FOR REMOVAL
- POSITION OF TEMPORARY PROTECTIVE BARRIERS TO EXCLUDE ALL CONSTRUCTION ACTIVITIES, (MACHINES & MATERIAL) TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORKS IN ACCORDANCE WITH BS 5837:2012 AS ILLUSTRATED BELOW

NOTE:

RPA's FOR TAGGED TREES RPA's ARE INDIVIDUALLY CALCULATED RPA's FOR 'TREE GROUPS' & 'HEDGEROWS' ARE INDICATIVE - BASED ON AVERAGE SIZE.

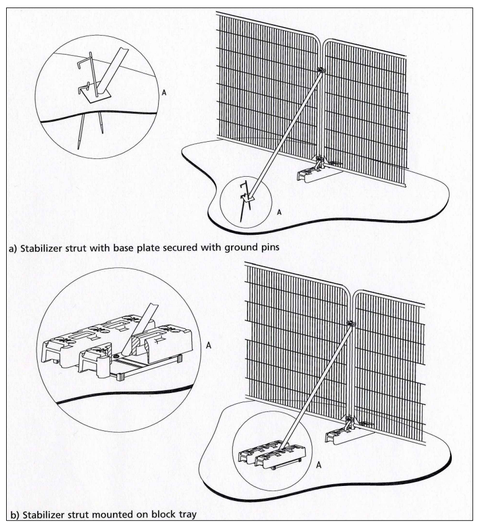
(THIS DRAWING IS PRODUCED IN COLOUR, MONOCHROME VERSIONS SHALL NOT BE RELIED UPON).

Tree Protection Fence Specification Options



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



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

REV	DATE	AMENDMENT
A	DEC 18	UPDATED ROAD LAYOUT

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PROJECT: **GLENAMUCK DISTRICT DISTRIBUTOR ROAD SCHEME, CO. DUBLIN.**	DATE: DECEMBER 2018
	SCALE: 1:4000 @ A1
	DRAWN: INIT CHECKED: KM
DRAWING: **TREE PROTECTION & REMOVAL**	DRAWING NO: **18234-T-103**