



# Gatwick Airport Northern Runway Project

Environmental Statement

Appendix 5.3.2: Code of Construction Practice Annex 6 – Outline Arboricultural and Vegetation

Method Statement Part 3 - Tracked Version

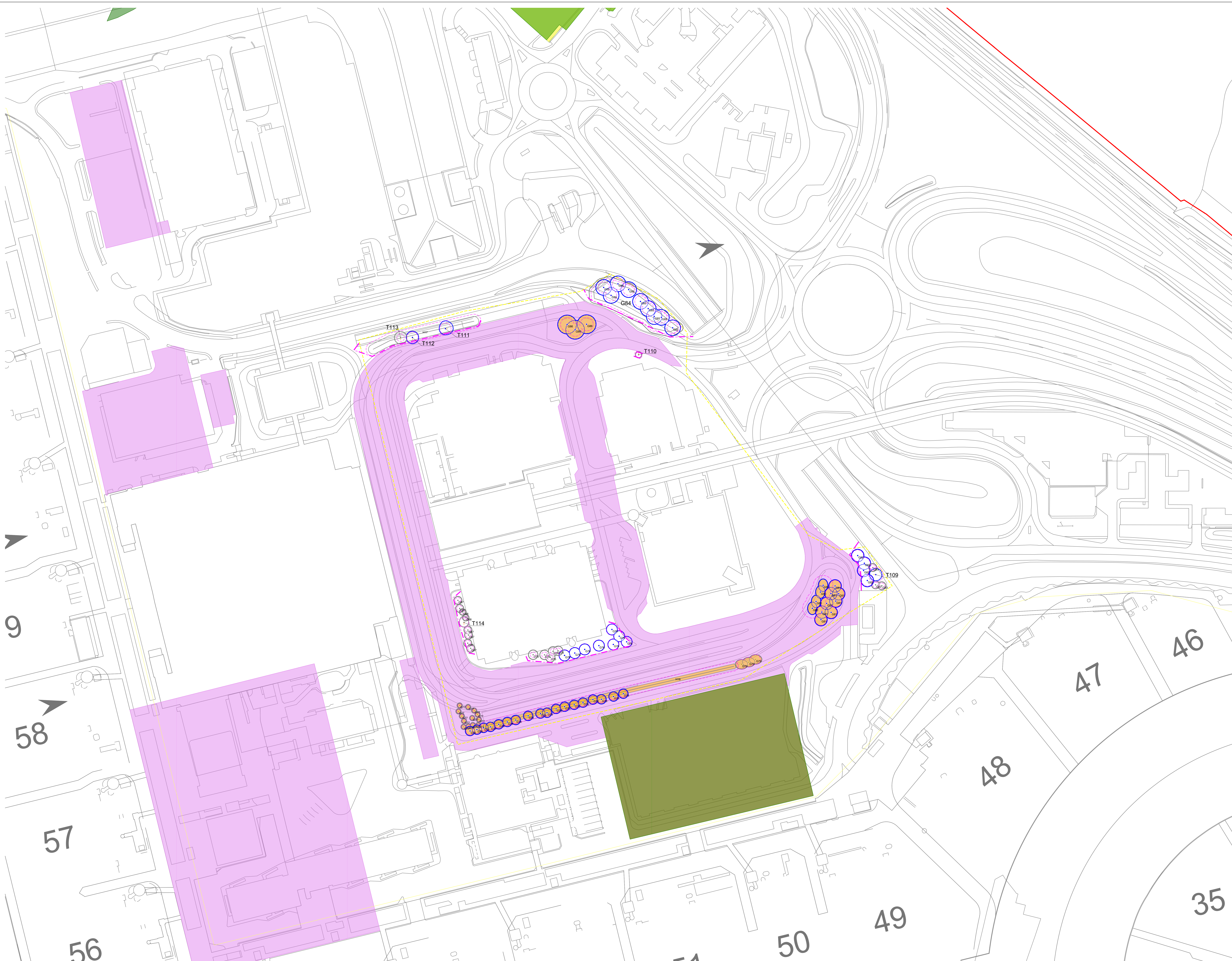
**Book 5**

VERSION: 2.0

DATE: APRIL 2024

Application Document Ref: 5.3

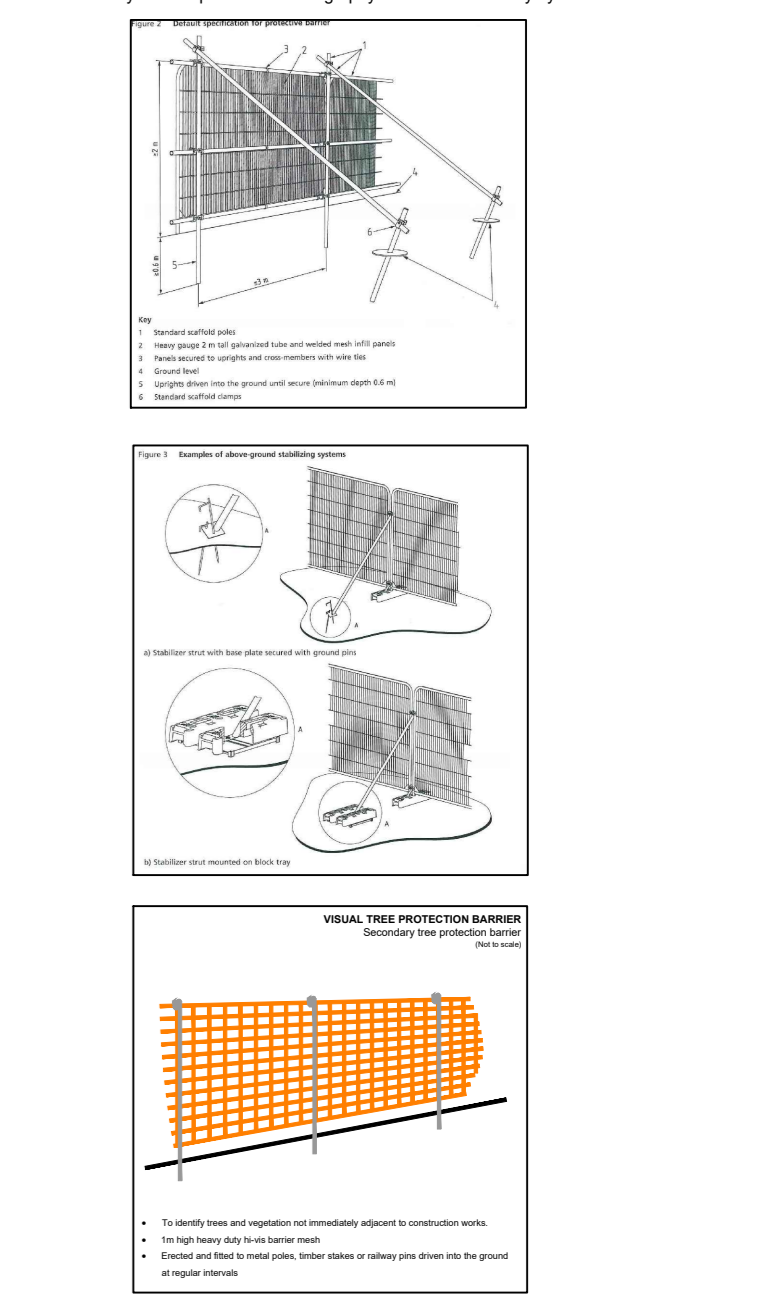
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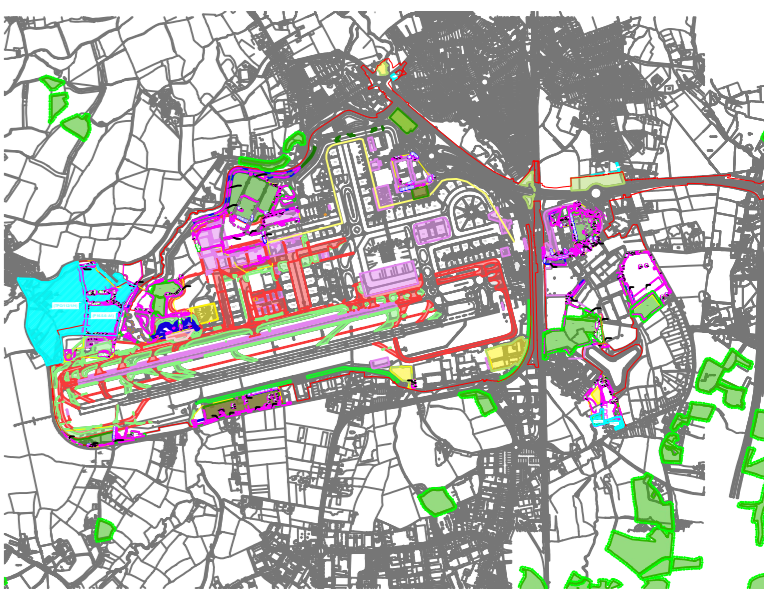
- Key**
- Red Line boundary.
  - Survey boundary.
  - Tree with numbered reference. Canopy spread and coloured B55837 2012 tree quality category as shown below.
    - = Tree details estimate (inaccessible tree)
    - = Tree in off site location
  - Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match B55837 2012 tree quality category as shown below and dashed line to show indicative stem line.
  - Hedge with numbered reference. Canopy extents coloured to match B55837 2012 tree quality category as shown below and dashed line to show hedge centreline.
  - Woodland with numbered reference. Canopy extents coloured to match B55837 2012 tree quality category as shown below and dashed line to show indicative tree line.
- B55837 2012 Tree Quality Categories - Table 1**
- Category A - High quality
  - Category B - Moderate quality
  - Category C - Low quality
  - Category U - Unsuitable for retention
- Direction of first significant branch
  - Root protection area (RPA). Calculated in accordance with Section 4.6 - B55837 2012
  - Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
  - Tree protected by Tree Preservation Order. Bracketed number reference relates to the TPO Schedule.
  - Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
  - Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
  - Tree to be removed with numbered reference. Canopy spread and B55837 2012 tree quality category.
  - Indicative temporary protective fence in accordance with Section 6.2 - B55837 2012. See below for example barriers.
  - Indicative secondary protective Hi-Viz Mesh fence in accordance with Section 6.2 - B55837 2012. See below for example barriers.
  - Indicative vegetation protective fence. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full condition report.
- Plan produced in accordance with recommendations set out in B55837 2012 - Trees in the Design, demolition and construction.
- Due to the large proportion of trees to be removed, vegetation removal should not take place during the hot weather periods generally, although not restricted to March - August inclusive.
- Several trees are near to the proposed road and are to be protected by eye.



**Key Plan**



**DOCUMENT**

**Environmental Statement**

**DRAWING TITLE**

**Airport Preliminary Tree Removal & Protection Plans Appendix 5.3.2 Annex 6 Sheet 6 of 13**

**DATE**

**January 2024**

ORIENTATION	DRAWING NO.	REVISION
	N	741
DRAWN BY	RC	PM / CHECKED BY
		DC

**SCALE @ A0**

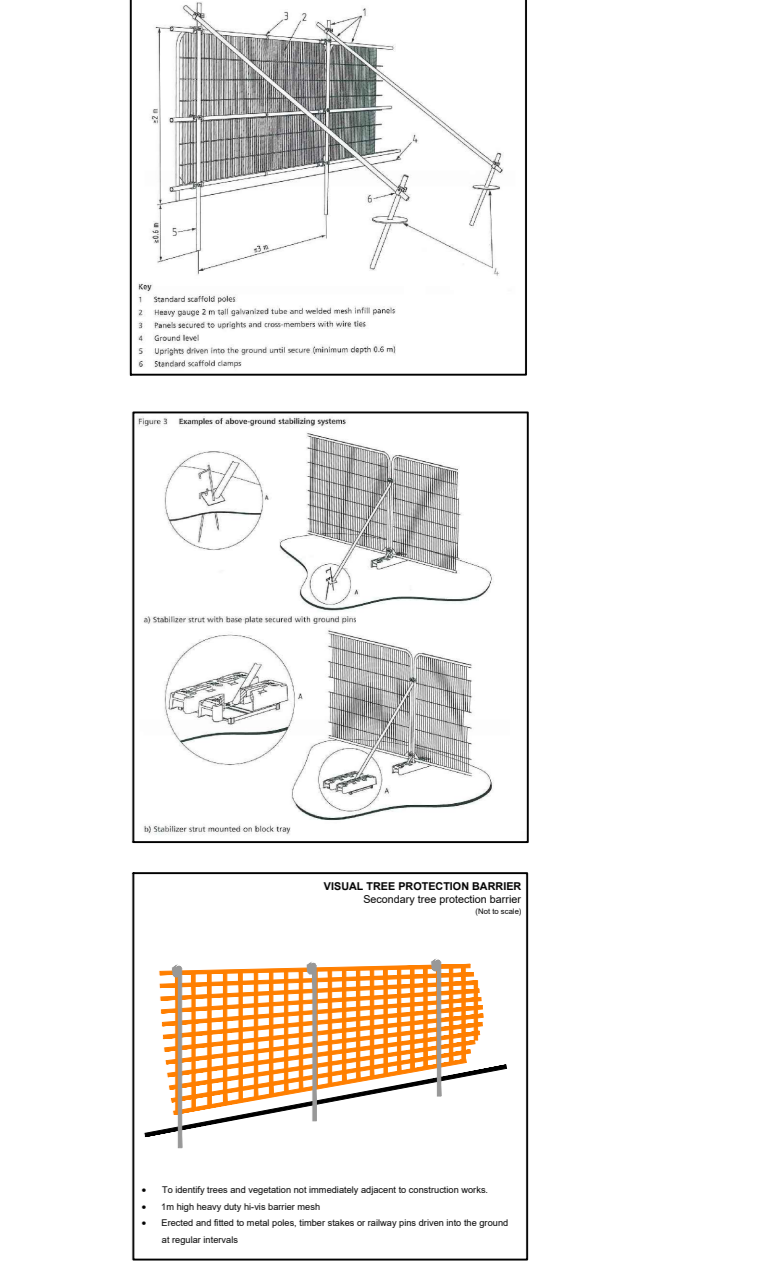
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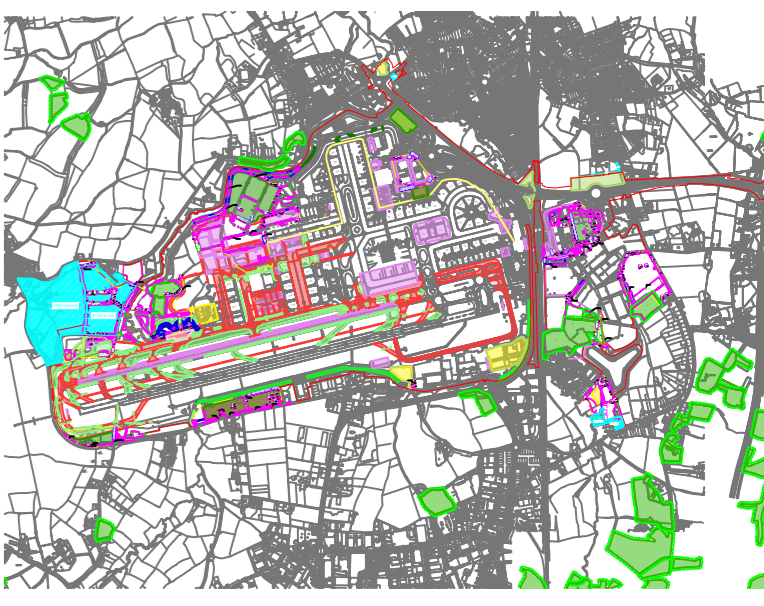
- Key**
- Red Line boundary.
  - Survey boundary.
  - Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
    - = Tree details estimate (measurable tree)
    - = Tree in off site location
  - Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
  - Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
  - Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centreline.
  - Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.
- BS 5837:2012 Tree Quality Categories - Table 1**
- Category A - High quality
  - Category B - Moderate quality
  - Category C - Low quality
  - Category U - Unsuitable for retention
- Direction of first significant branch
  - Root protection area (RPA). Calculated in accordance with Section 4.6.
  - BS5837:2012
  - Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
  - Tree protected by Tree Preservation Order. Bracketted number reference relates to the TPO Schedule.
  - Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
  - Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
  - Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
  - Indicative temporary protective fence in accordance with Section 6.2 - BS5837:2012. See below for example barriers.
  - Indicative secondary protective Hi-Viz Mesh fence in accordance with Section 6.2 - BS5837:2012. See below for example barriers.
  - Indicative vegetation protective fence. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended to be an architectural survey.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - Trees in the Urban, Suburban and Countryside.
- Due to the large proportion of trees to be removed, vegetation removal should not take place during the hot weather periods generally, although not restricted to March - August inclusive.
- Some trees are overhanging buildings and trees located by eye.



**Key Plan**



**DOCUMENT**

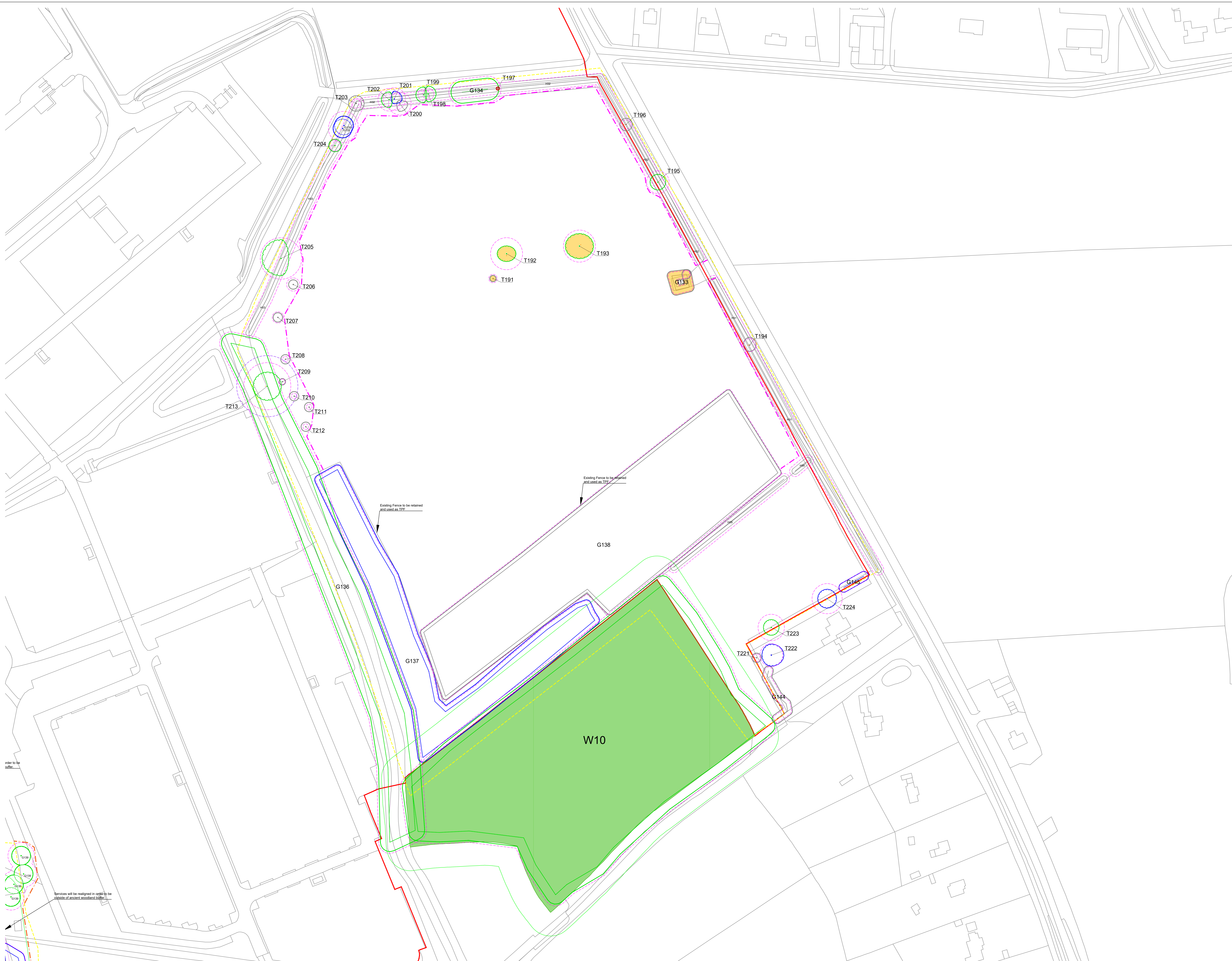
**Environmental Statement**

DRAWING TITLE  
**Airport Preliminary Tree Removal & Protection Plans**  
 Appendix 5.3.2 Annex 6  
 Sheet 7 of 13

DATE  
**January 2024**

ORIENTATION N	DRAWING NO. 742	REVISION For ES Issue
	DRAWN BY RC	PM / CHECKED BY DC

SCALE @ A0  
 0m 25m 50m



### Key

- Red Line boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
  - = Tree details estimate (irreversible tree)
  - = Tree in off site location
- Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centreline.
- Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

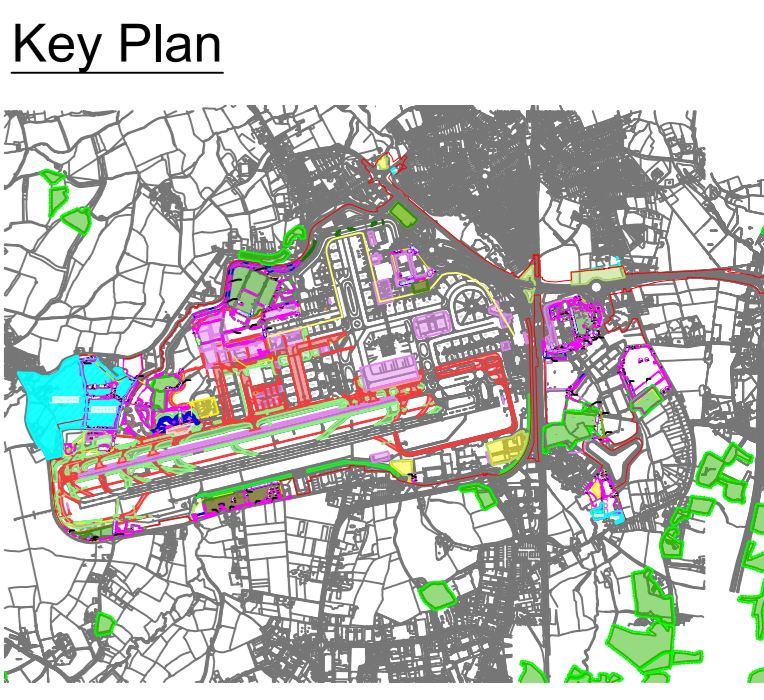
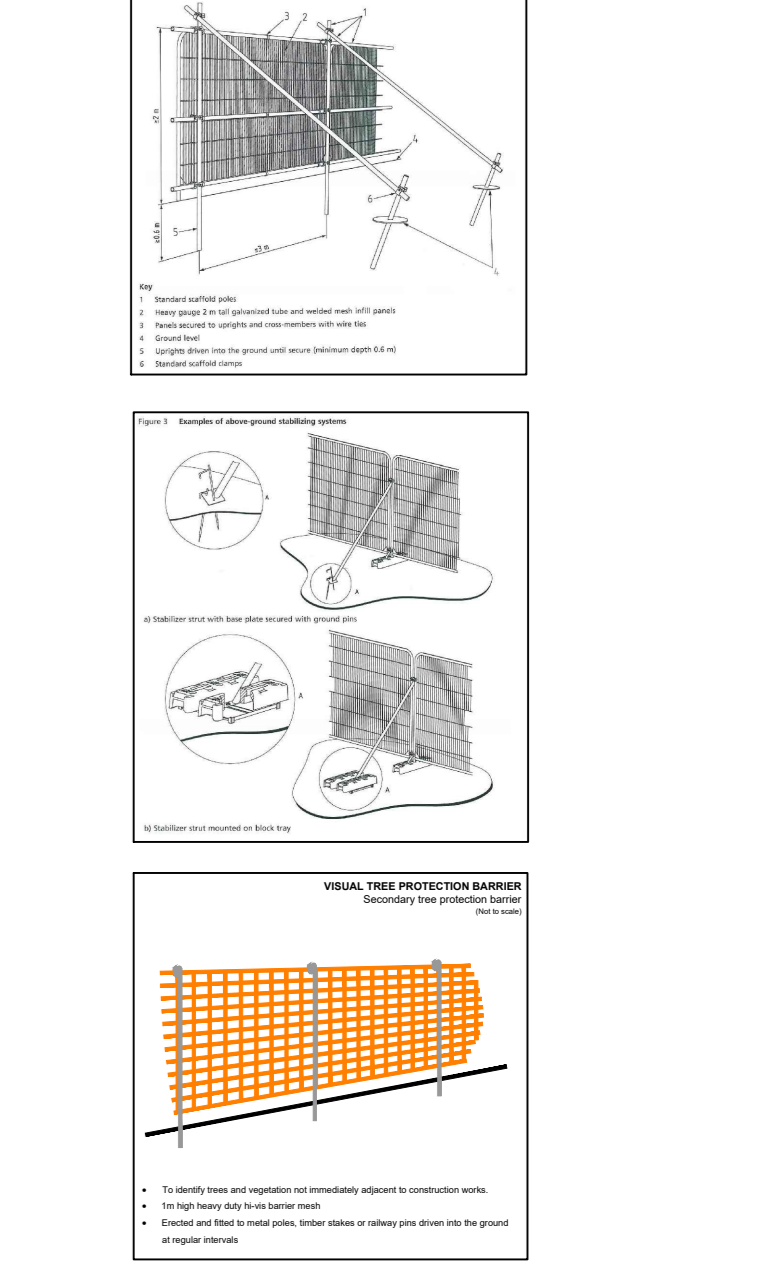
BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA). Calculated in accordance with Section 4.6.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- Tree protected by Tree Preservation Order. Bracketted number reference relates to the TPO Schedule.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
- Indicative temporary protective fence in accordance with Section 6.2 - BS5837:2012. See below for example barriers.
- Indicative secondary protective Hi-Vi Mesh fence in accordance with Section 6.2 - BS5837:2012. See below for example barriers.
- Indicative vegetation protective fence. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a structural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - Trees in Practice to design, install and construct.
- Due to the high protection afforded to breeding birds vegetation removal should not take place during the bird nesting period generally, although not restricted to March - August inclusive.
- Survey based upon aerial photography and trees located by eye.



DOCUMENT

**Environmental Statement**

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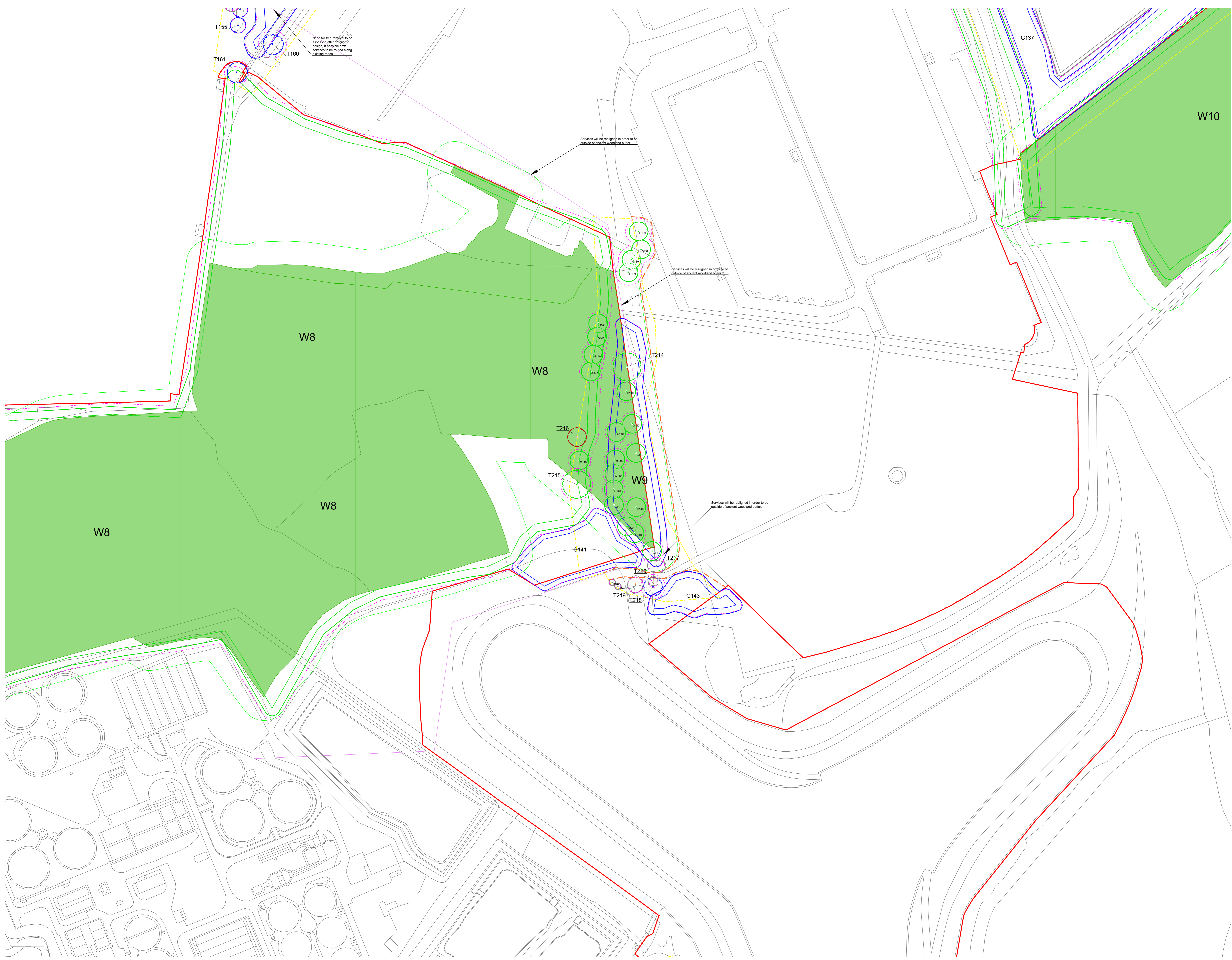
DRAWING TITLE  
**Airport Preliminary Tree Removal & Protection Plans**  
 Appendix 5.3.2 Annex 6  
 Sheet 8 of 13

DATE  
 January 2024

ORIENTATION N	DRAWING NO. 743	REVISION For ES Issue
	DRAWN BY RC	PM / CHECKED BY DC

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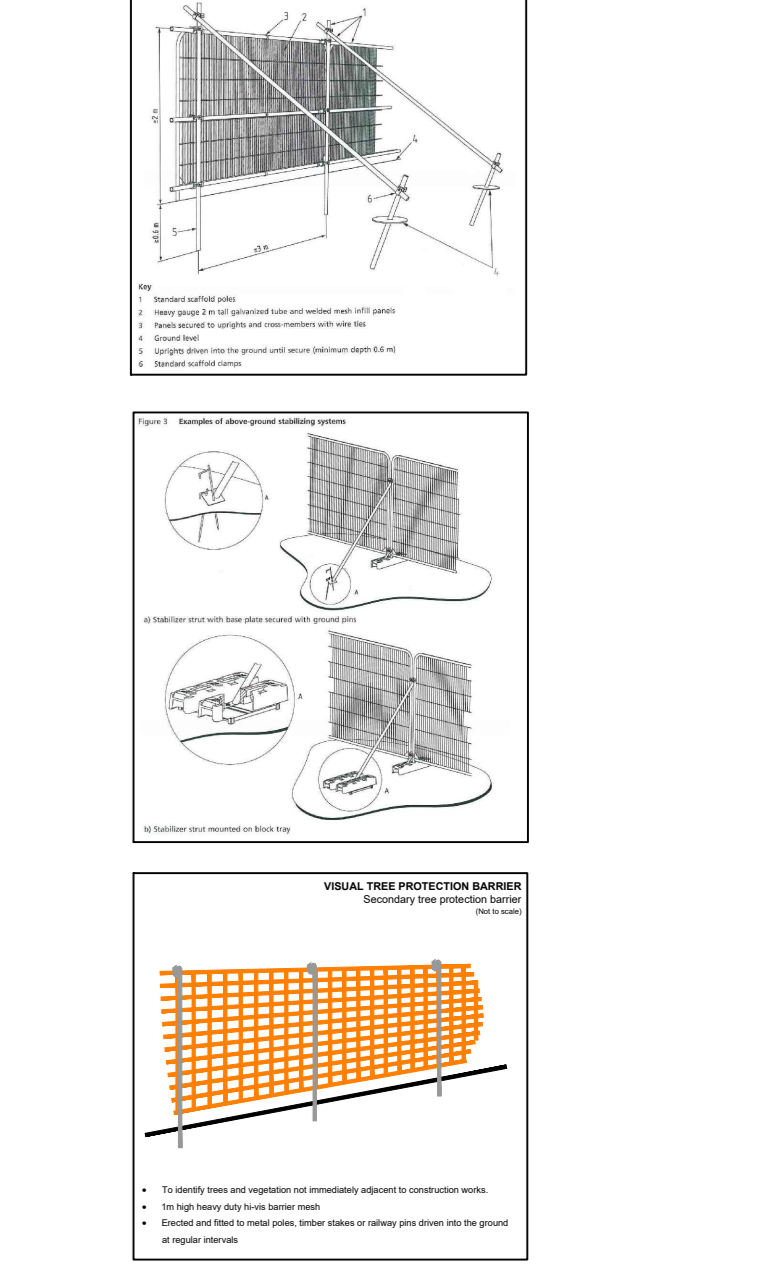
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- Key**
- Red Line boundary.
  - Survey boundary.
  - Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
    - = Tree details estimate (measurable tree)
    - = Tree in off site location
  - Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
  - Hedge with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show hedge centreline.
  - Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.
- BS 5837:2012 Tree Quality Categories - Table 1
- Category A - High quality
  - Category B - Moderate quality
  - Category C - Low quality
  - Category U - Unsuitable for retention
- Direction of first significant branch
  - Root protection area (RPA). Calculated in accordance with Section 4.6 of BS5837:2012
  - Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
  - Tree protected by Tree Preservation Order. Bracketted number reference relates to the TPO Schedule.
  - Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
  - Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
  - Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
  - Indicative temporary protective fence line in accordance with Section 6.2 of BS5837:2012. See below for example barriers.
  - Indicative secondary protective Hi-Viz Mesh fence line in accordance with Section 6.2 of BS5837:2012. See below for example barriers.
  - Indicative vegetation protective fence line. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a field verification exercise.
- Plan produced in accordance with recommendations set out in BS 5837:2012. Trees to be removed are those identified as such.
- Due to the large quantities of trees to be removed, vegetation removal should not take place during the hot weather periods generally, although not restricted to March - August inclusive.
- Some trees are open to the public and are located by sign.



**Key Plan**

**DOCUMENT**

**Environmental Statement**

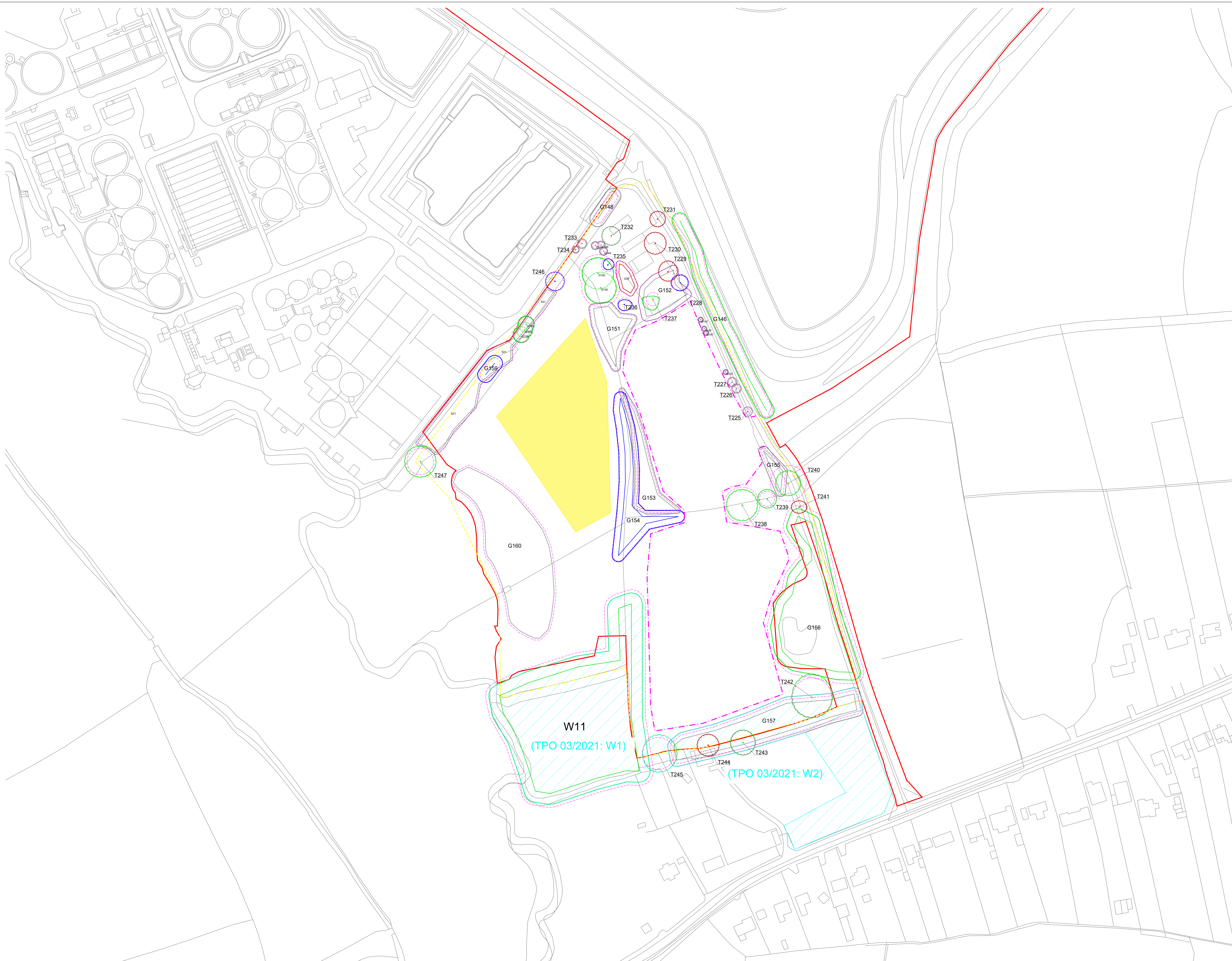
DRAWING TITLE  
**Airport Preliminary Tree Removal & Protection Plans**  
 Appendix 5.3.2 Annex 6  
 Sheet 9 of 13

DATE  
**January 2024**

ORIENTATION N	DRAWING NO. 744	REVISION For ES Issue
	DRAWN BY RC	PM / CHECKED BY DC

SCALE @ A0  
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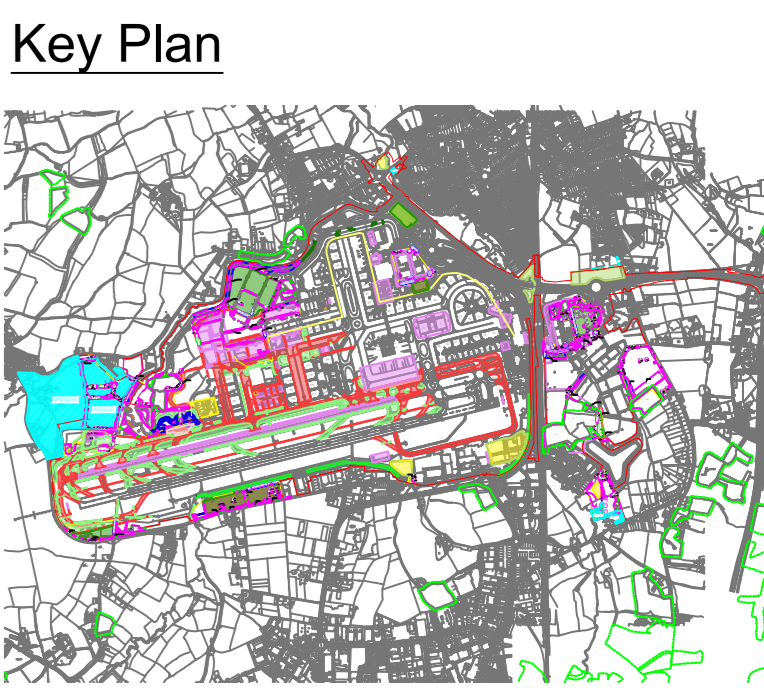
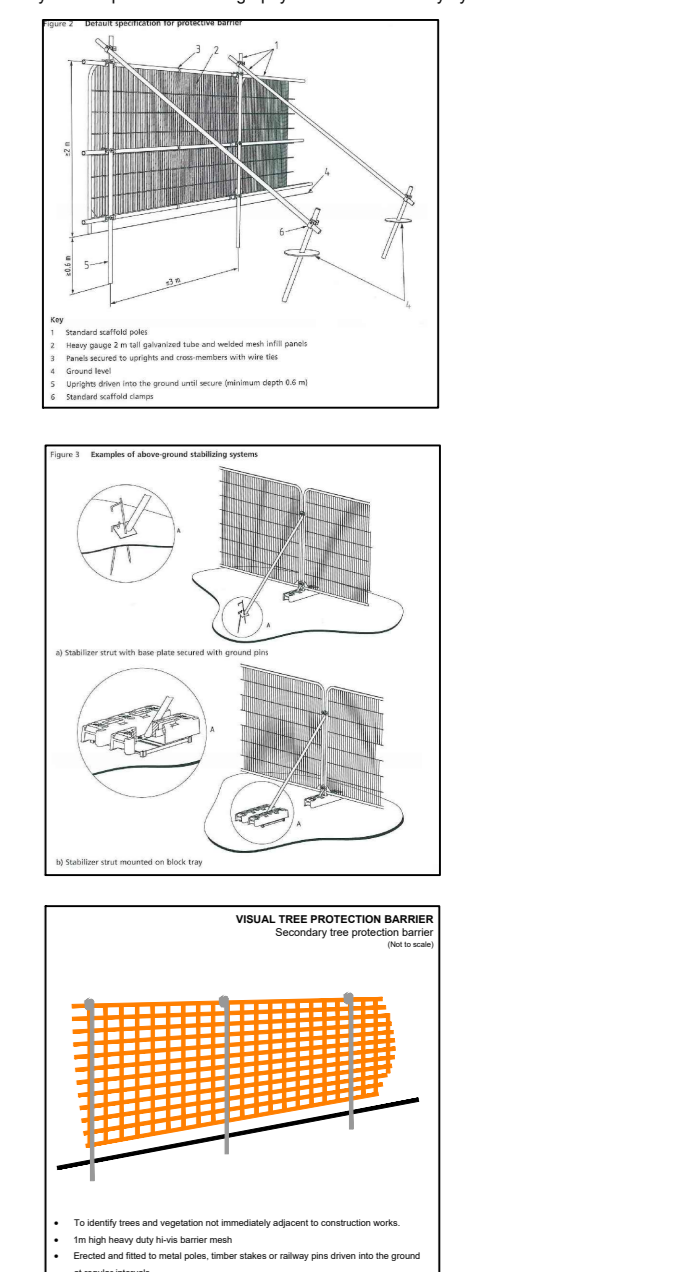
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- Key**
- Red Line boundary.
  - Survey boundary.
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    - = Tree details estimate (impossible tree)
    - = Tree in off site location
  - Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
  - Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
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  - Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
  - Indicative temporary protective fence line in accordance with Section 6.2.1 BS5837:2012. See below for example barriers.
  - Indicative secondary protective Hi-Viz Mesh fence line in accordance with Section 6.2.2 BS5837:2012. See below for example barriers.
  - Indicative vegetation protective fence line. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a final structural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012. Trees in this category, however, are not intended to be removed during the life of the project, although not necessarily. March - August retention.
- Survey based on aerial photography and trees located by eye.



**DOCUMENT**

**Environmental Statement**

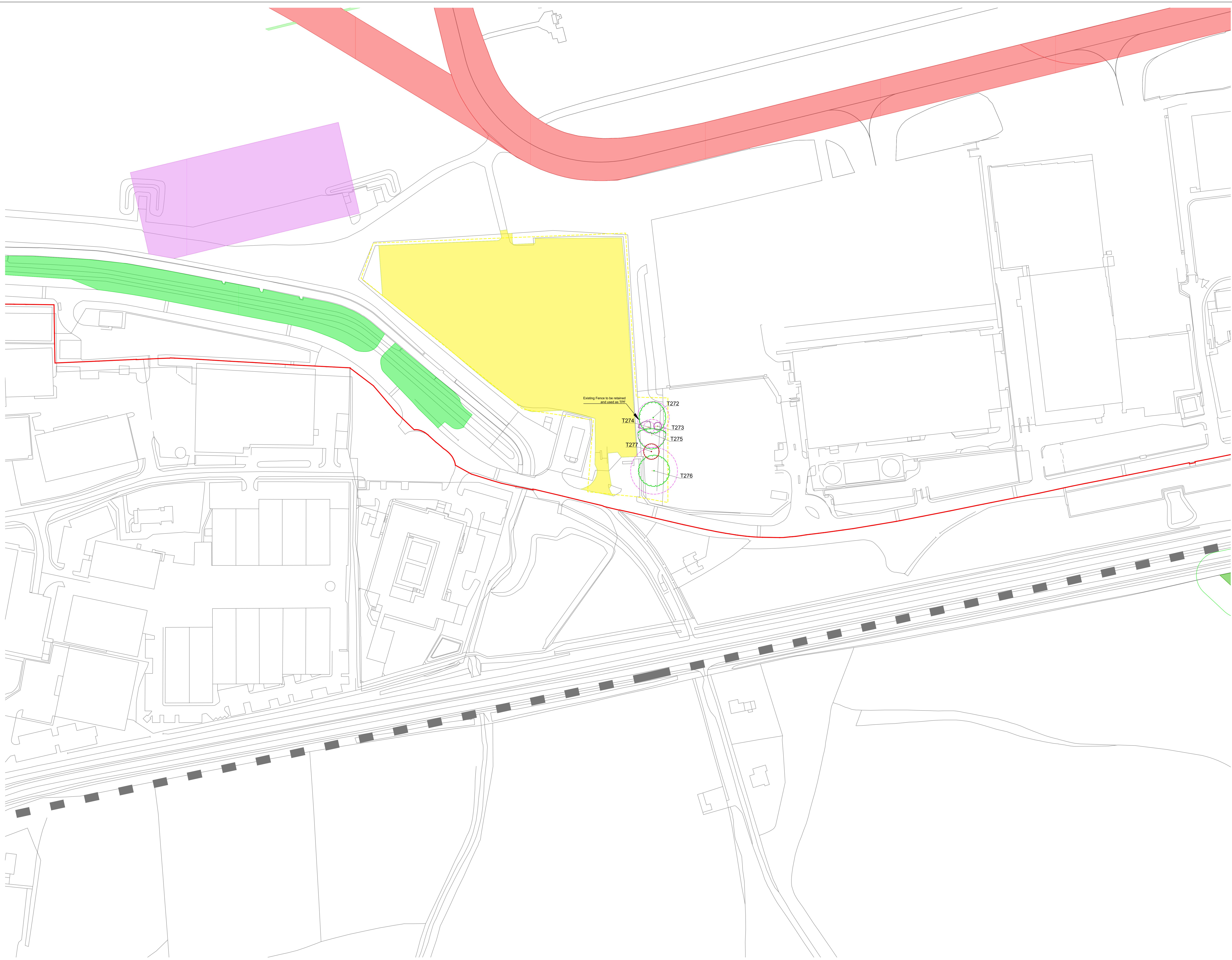
DRAWING TITLE  
**Airport Preliminary Tree Removal & Protection Plans**  
 Appendix 5.3.2 Annex 6  
 Sheet 10 of 13

DATE  
 January 2024

ORIENTATION N	DRAWING NO. 745	REVISION For ES Issue
	DRAWN BY RC	PM / CHECKED BY DC

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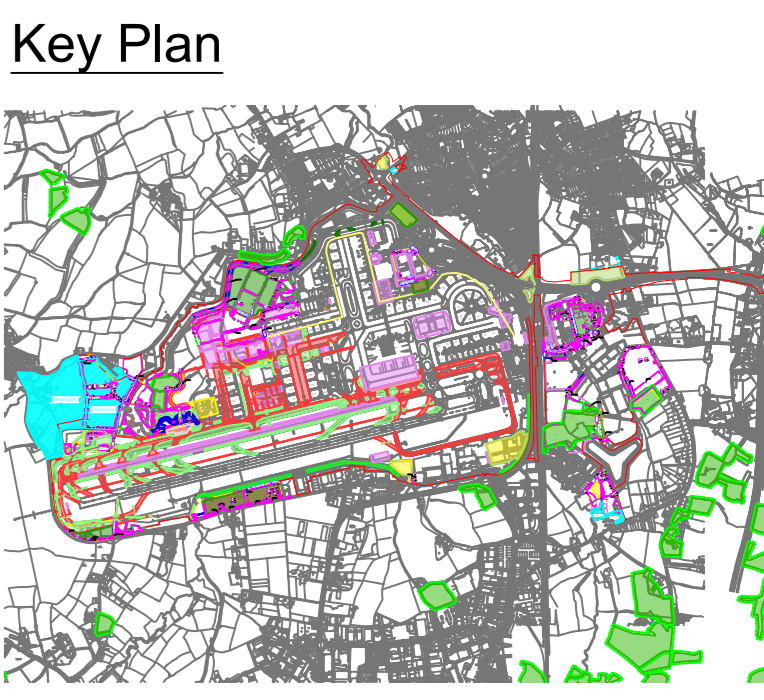
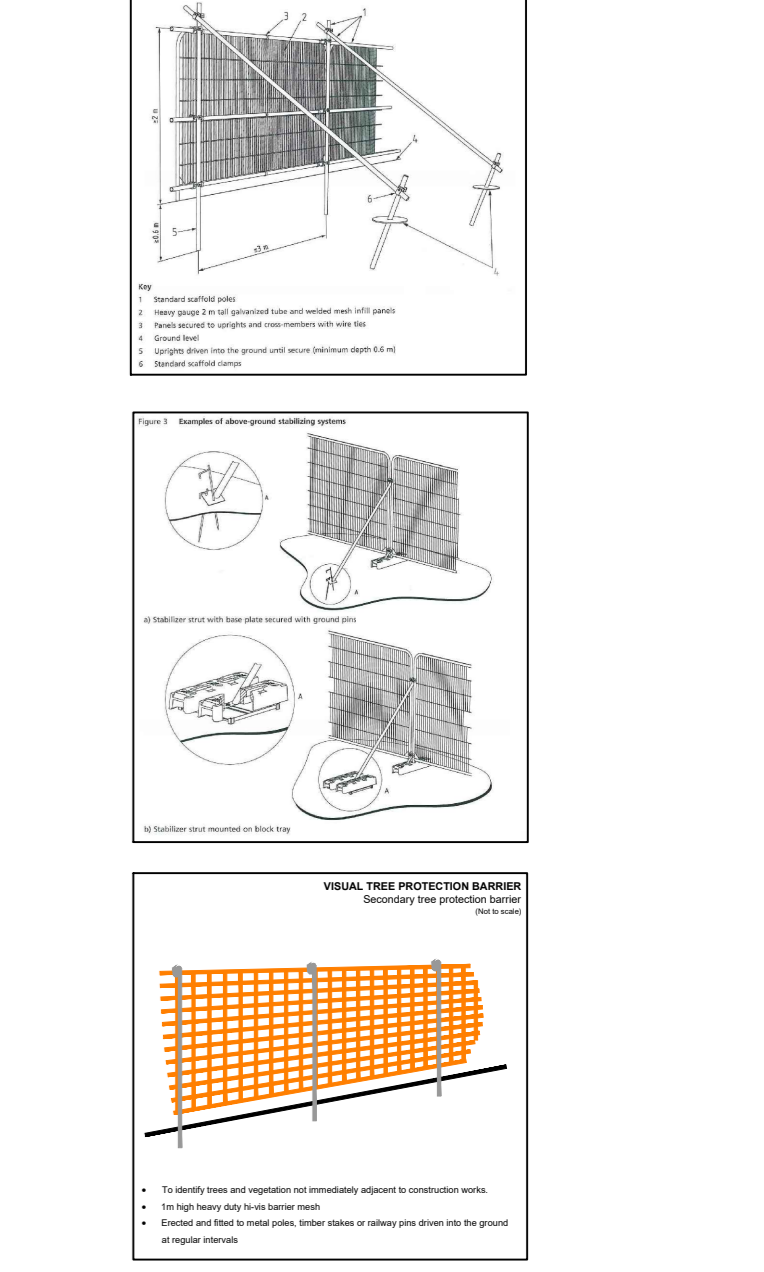
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- Key**
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    - = Tree details estimate (impossible tree)
    - = Tree in off site location
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  - Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
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  - Category C - Low quality
  - Category U - Unsuitable for retention
- Direction of first significant branch
  - Root protection area (RPA). Calculated in accordance with Section 4.6.
  - BS5837:2012 Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
  - Tree protected by Tree Preservation Order. Bracketted number reference relates to the TPO Schedule.
  - Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
  - Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
  - Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
  - Indicative temporary protective fence in accordance with Section 6.2. BS5837:2012. See below for example barriers.
  - Indicative secondary protective Hi-Viz Mesh fence in accordance with Section 6.2 - BS5837:2012. See below for example barriers.
  - Indicative vegetation protective fence. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full structural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012. Trees in red to be removed, green to be retained.
- Due to the large protection afforded to existing trees, vegetation removal should not take place during the hot weather periods generally, although not restricted to March - August inclusive.
- Some trees are shown as photographs and trees located by eye.



**DOCUMENT**

**Environmental Statement**

DRAWING TITLE  
**Airport Preliminary Tree Removal & Protection Plans**  
 Appendix 5.3.2 Annex 6  
 Sheet 11 of 13

DATE  
 January 2024

ORIENTATION N	DRAWING NO. 746	REVISION For ES Issue
	DRAWN BY RC	PM / CHECKED BY DC

SCALE @ A0  
 0m 25m 50m

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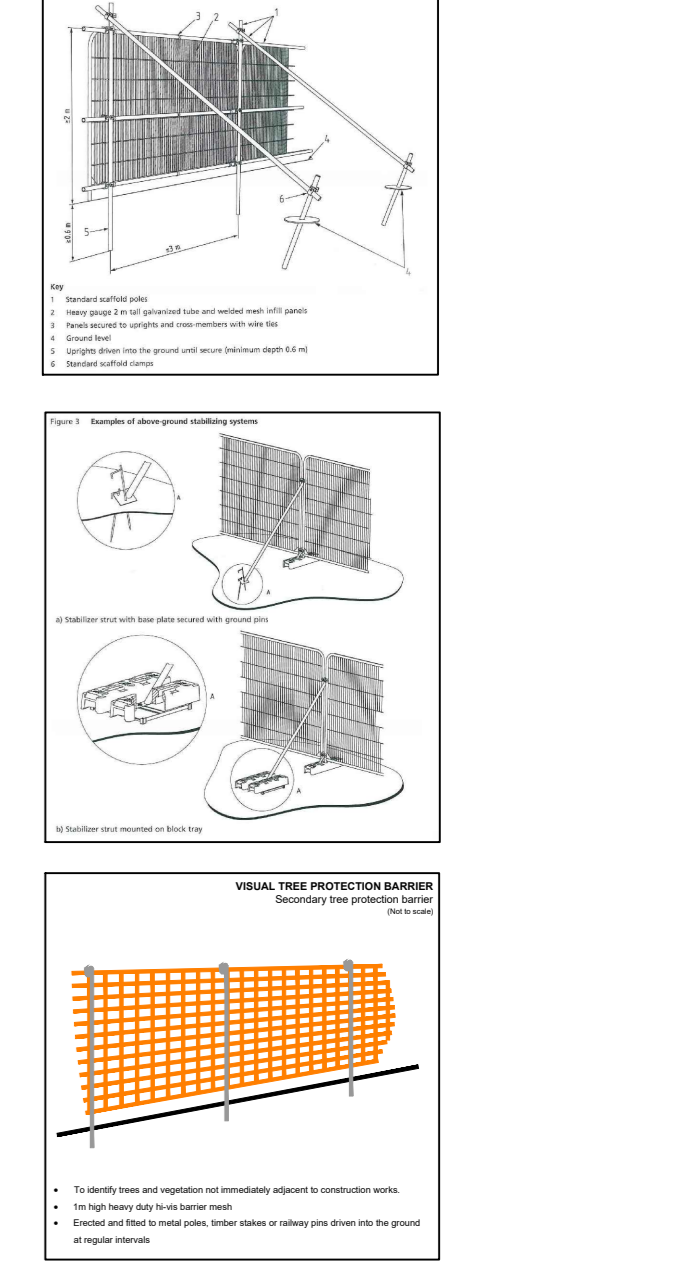




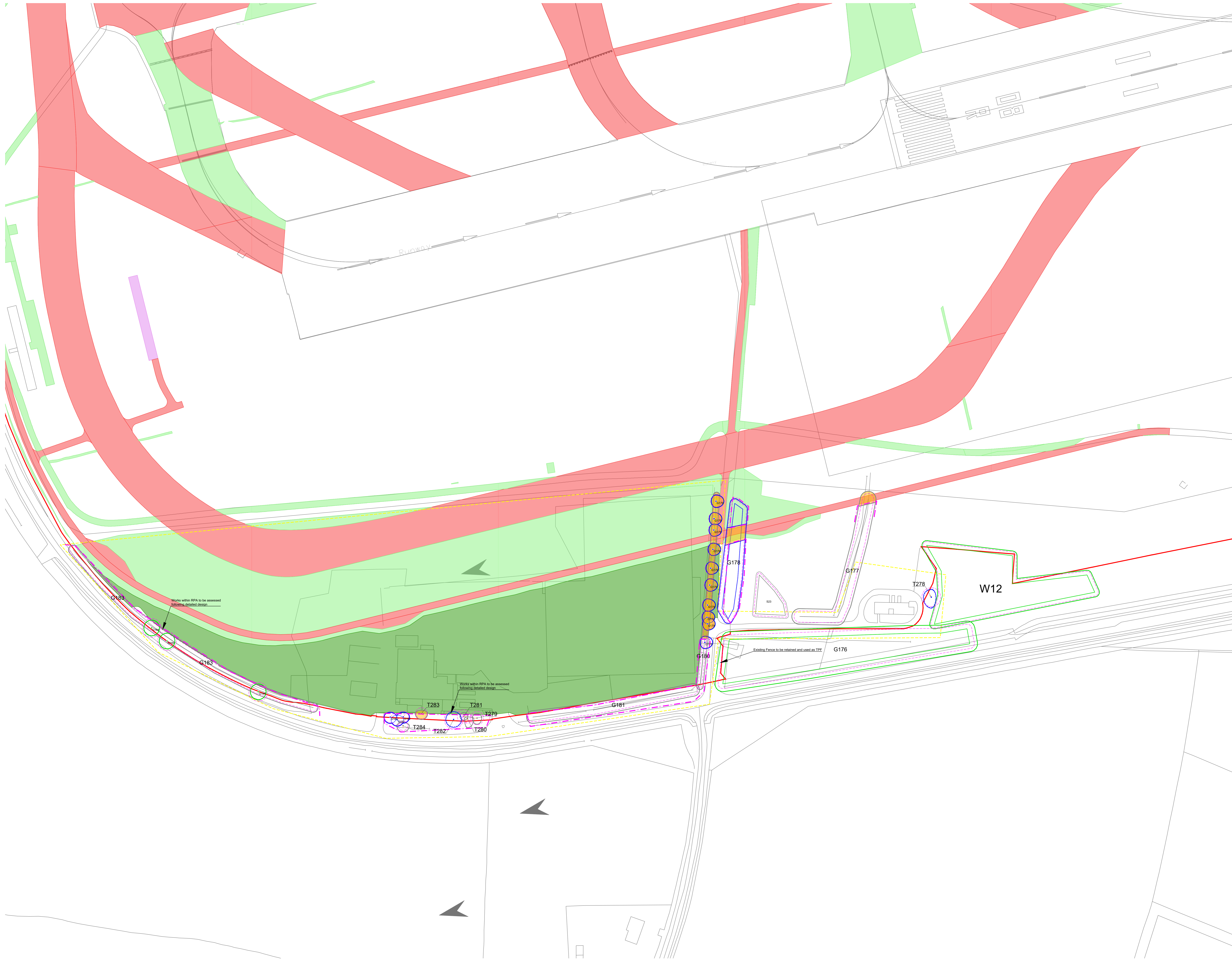
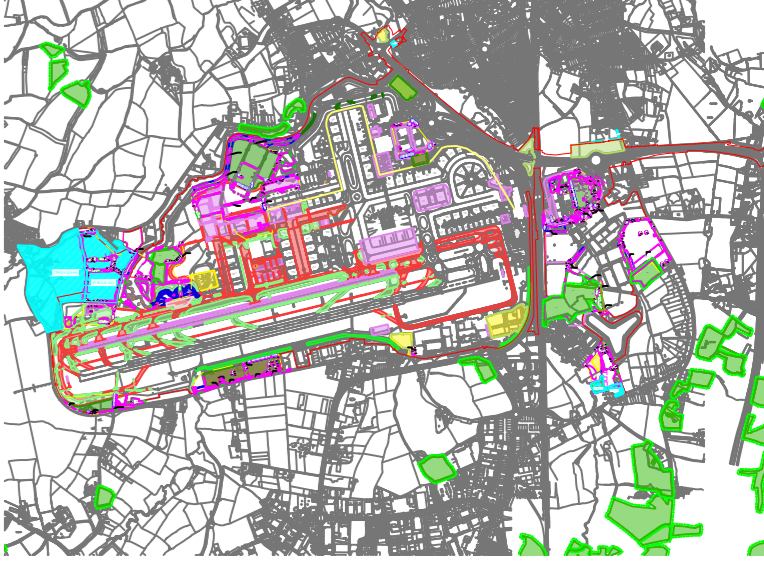
- Key**
- Red Line boundary.
  - Survey boundary.
  - Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
    - = Tree details estimate (non-removable tree)
    - = Tree in off site location
  - Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
  - Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
  - Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centreline.
  - Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.
- BS 5837:2012 Tree Quality Categories - Table 1
- Category A - High quality
  - Category B - Moderate quality
  - Category C - Low quality
  - Category U - Unsuitable for retention
- Direction of first significant branch
  - Root protection area (RPA). Calculated in accordance with Section 4.6.1 BS5837:2012
  - Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
  - Tree protected by Tree Preservation Order. Bracketted number reference relates to the TPO Schedule.
  - Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
  - Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
  - Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
  - Indicative temporary protective fence line in accordance with Section 6.2.1 BS5837:2012. See below for example barriers.
  - Indicative secondary protective Hi-Viz Mesh fence line in accordance with Section 6.2 - BS5837:2012. See below for example barriers.
  - Indicative vegetation protective fence line. Design and location to be agreed by local council during detail design.

**NOTES:**

- Refer to RPA Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full structural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012. Trees to be removed in design, demolition and construction.
- Due to the large protection afforded to existing trees, vegetation removal should not take place during the hot working period, generally, although not restricted. Marsh - August reduction.
- Survey based upon aerial photography and trees located by eye.



**Key Plan**



**DOCUMENT**

**Environmental Statement**

DRAWING TITLE  
**Airport Preliminary Tree Removal & Protection Plans**  
 Appendix 5.3.2 Annex 6  
 Sheet 13 of 13

DATE  
 January 2024

ORIENTATION N	DRAWING NO. 748	REVISION For ES Issue
	DRAWN BY RC	PM / CHECKED BY DC

SCALE @ A0  
 0m 25m 50m

**Appendix C**  
M23 & A23 Preliminary Vegetation Removal & Protection Plans

[to be submitted at Deadline 4]

[Appendix D](#)

[Airport Preliminary Vegetation Removal & Protection Plans](#)

Appendix E

Example Tree Protection Fencing (BS5837:2012 Fig 2 & 3)

Figure 2 Default specification for protective barrier

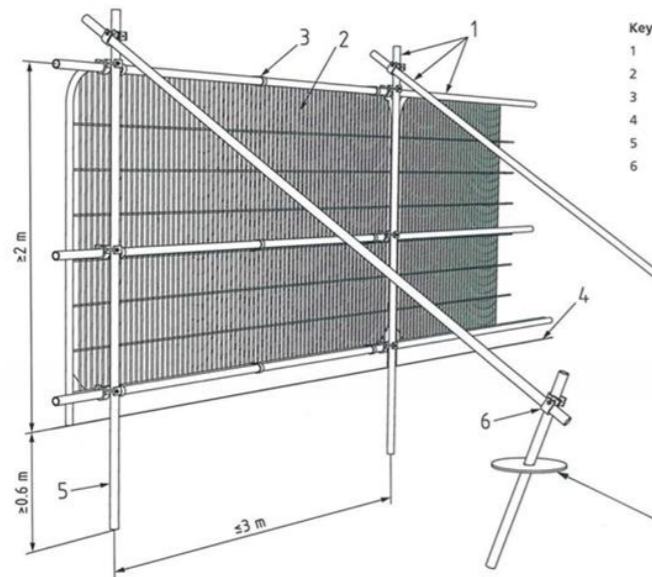
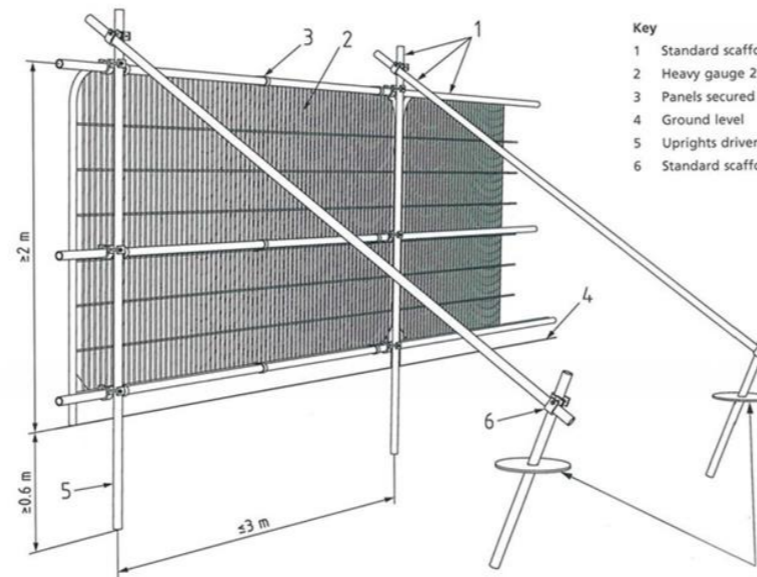
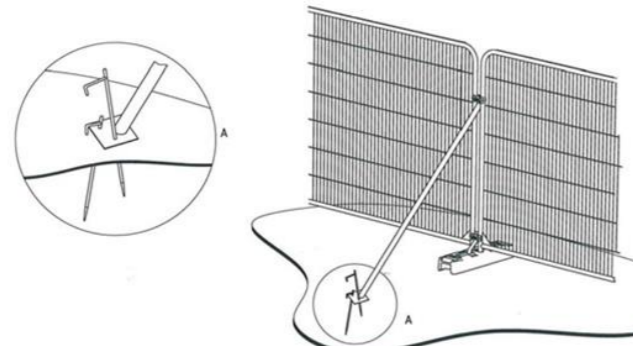


Figure 2 Default specification for protective barrier

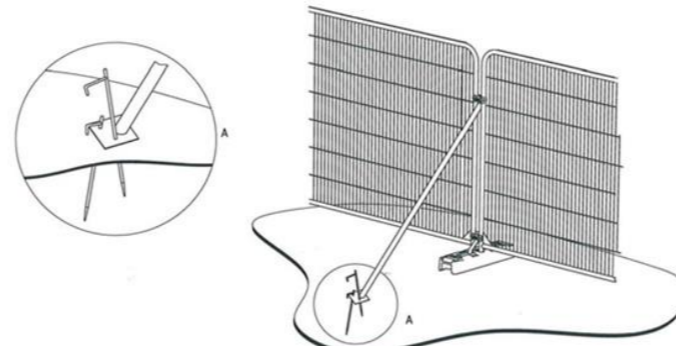


- Key
- 1 Standard scaffold poles
  - 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
  - 3 Panels secured to uprights and cross-members with wire ties
  - 4 Ground level
  - 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
  - 6 Standard scaffold clamps

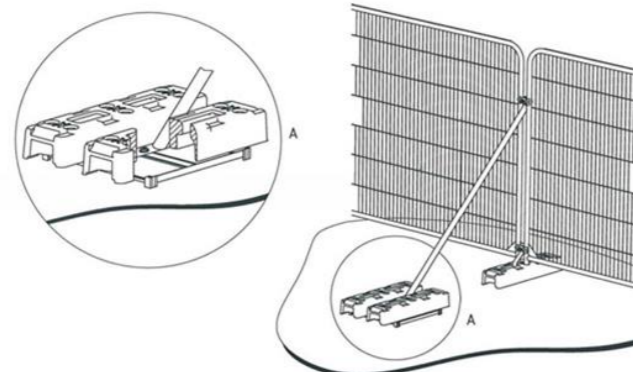
Figure 3 Examples of above-ground stabilizing systems



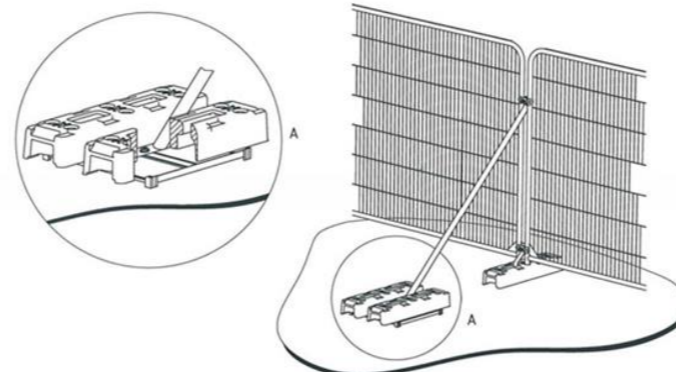
a) Stabilizer strut with base plate secured with ground pins



a) Stabilizer strut with base plate secured with ground pins

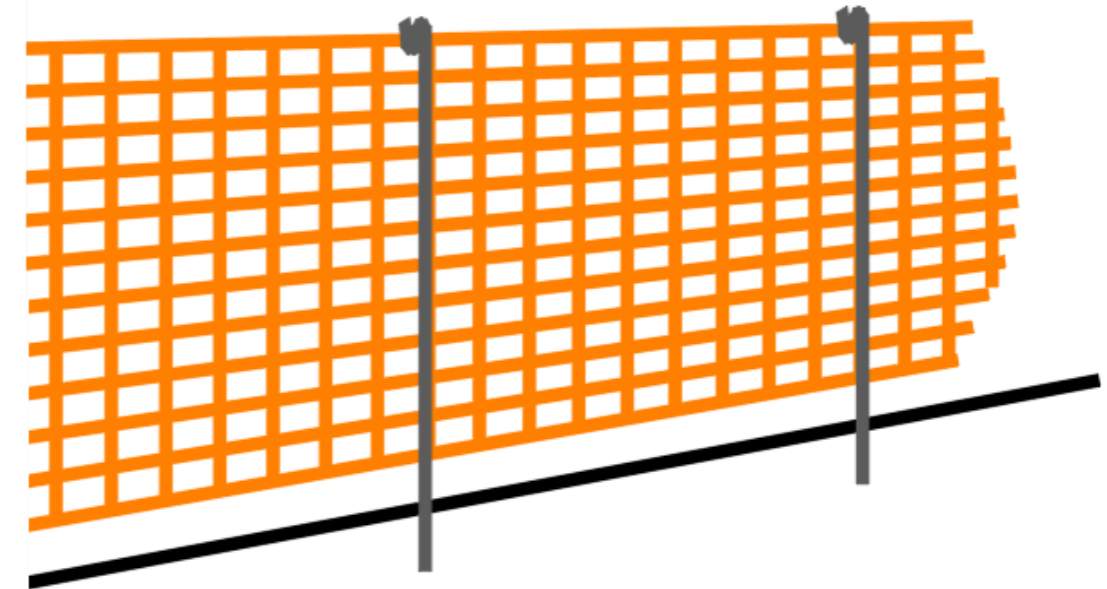


b) Stabilizer strut mounted on block tray



b) Stabilizer strut mounted on block tray

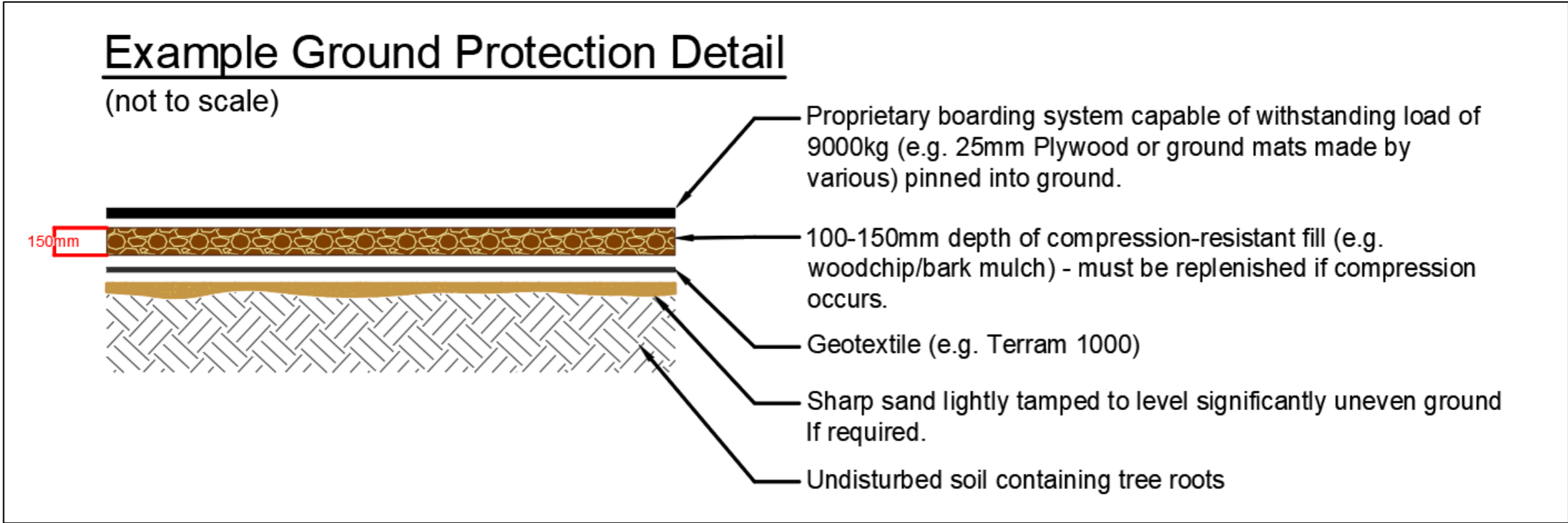
**VISUAL TREE PROTECTION BARRIER**  
Secondary tree protection barrier  
(Not to scale)



For trees and vegetation not immediately adjacent to construction works.  
 Heavy duty hi-vis barrier mesh  
 Mesh fitted to metal poles, timber stakes or railway pins driven into the ground  
 at regular intervals

Example Construction Exclusion Zone (CEZ) Sign





Trenchless solutions for differing utility apparatus installation requirements (BS 5837:2012)					
Method	Accuracy mm	Bore dia. (A) mm	Max sub (B) length m	Applications	Not suitable for
Microtunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway undercrossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1 200	150	Pressure pipes, cables including fibre optic	Gravity-fall pipes, eg. drains and sewers <b>(C)</b>
Pipe ramming	≈150	150 to 2 000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling <b>(D)</b>	≈50 <b>(E)</b>	30 to 180 <b>(F)</b>	40	Gas, water and cable connections, eg. from street to property	Any application that requires accuracy over distances in excess of 5m

(A) Dependent on strata encountered.

(B) Maximum subterranean length.

(C) Pit-launched directional drilling can be used for gravity fall pipes up to 20m subterranean length.

(D) Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.

(E) Substantial inverse relationship between accuracy and distance.

(F) Figures given relate to single pass: up to 300mm bore achievable with multiple passes.

**Age-class** - A general classification of the tree into either - young, semi-mature, early mature, mature, over-mature, or veteran.

**Apical Bud/Shoot** – The apical bud, also known as the leading shoot, is responsible for shoot extension and is dominant.

**Apical Dominance** – A singular, leading shoot remains dominant.

**Arboreal** - In connection with, or in relation to, trees.

**Arboriculturist** – Person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the field of trees in relation to construction.

**Arboricultural Implications Assessment (AIA)** – Study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

**Arboricultural & Vegetation Method Statement (AMS&VMS)** – Methodology for the implementation of any aspect of development that has the potential to result in the loss of or damage to a tree. Note The AMS&VMS is likely to include details of an on-site tree protection monitoring regime.

**Asymmetric crown**- Crowns that have a morphological bias in a particular direction. This can give the tree an aesthetically unfavourable appearance but can also subject the tree to uneven wind- loading forces and potentially result in failure.

**Basal** – Referring to the bottom part of a tree's stem.

**Basifugal mortality** – A natural process seen in trees in an advanced life stage whereby the trees extremities die back, and the inner crown expresses new growth, in order to conserve energy reserves.

**Bifurcated** - A growth characteristic, where two stems of similar size grow from the same point. Can create an inherent weakness.

**Branch union/junction** - The point at which a branch joins a larger stem. Can be a point of weakness, especially in certain species.

**Brown Rot**- Decay caused by certain species of fungus which results in the affected wood becoming brittle and liable to suddenly 'break out', especially if in key structural areas.

**Buttress flares** – Extensions of the basal stem of a tree that provide additional structural support. See reaction wood.

**Bifurcated**- A growth characteristic, where two or more stems of similar size grow from the same point. Can create an inherent weakness.

**Cable braces** – Cable braces used to support the crown of a tree, reduce impacts caused by wind- throw oscillation.

**Canker** – A clearly defined area of dead and sunken or malformed bark, caused by bacteria or fungi. Can have a bearing on structural integrity of infected limb(s) depending on size and location.

**Central leader**- See apical dominance.

**Chalara ash dieback**- A disease affecting ash trees caused by the fungus *Hymenoscyphus fraxineus*. Usually fatal, the disease causes leaf loss and crown dieback in infected trees. It was first confirmed in Britain in 2012.

**Chlorosis**- yellowing of leaves which can be caused by a range of factors, often an indicator of nutrient deficiency.

**Compaction** - The compressing & hardening of soil around tree root systems, due to vehicular/pedestrian use etc. Loss of pore space between soil granules limits water movement and gaseous exchange and inhibits root growth.

**Companion shelter**- Shelter provided by neighbouring trees in groups to one another, factors such as wind throw are reduced due to supporting branches and interlocking root systems. Removing individual trees on the peripheries of such groups can expose neighbouring trees to environmental factors they have not previously been subjected to and can lead to individual failure.

**Competent person** – Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached

Note 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can arise. For example, when on site, a competent person is able to recognise at all times whether it is safe to proceed.

Note 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be implemented.

**Condition** – Assessment based on a visual and professional view giving consideration to many factors such as tree health, structural integrity and suitability of its position.

**Conservation dead- wooding**- Removal of deadwood using 'coronet cuts' that mimic the way a branch would naturally break off, maximising deadwood habitat availability for invertebrates.

**Coppice** - The method of managing trees by cutting the stems at between 1.0 inch and 1.0 foot from the ground level on a regular cycle, the cut stumps of the trees or shrubs are allowed to re-grow many new stems.

**Crown spread** - Gives distances between extreme limits of the crown and the stem, usually along the four compass points. Helps to show crown symmetry.

**Crown Reduction** – The removal of branch ends to reduce the extreme limits of a tree's branch spread and height.

**Crown Thin** – The removal of selected branches within the crown to thin the internal branch structure.

**D.B.H.** - 'Diameter at Breast Height', an industry standard to gauge tree stem size and development. Within arboriculture, breast height is taken to be 1.5m above ground level.

**Dieback** - The reduction in crown vigour and extension growth progressing to death of distal parts; often associated with decline.

**Epicormic growth** - New growth from dormant buds that can often form tenuous attachments. Although some species readily form such shoots, it can be an indication of stress.

**Form** - A general assessment of the shape and position of the tree within its environment.

**Hanger** – Term used to describe a branch that has become detached and is being supported by other branches. Can be a hazard to persons and property below.

**Hazard Beam** – After the loss of a distal part, a limb concentrates growth upwards creating adverse end weights that can render the limb susceptible to failure.

**Included bark** – Growth characteristic usually caused when two or more stems/branches growing in close proximity 'fuse' together entrapping the bark from when the parts were separate in the middle, creating a structural weakness.

**Invertebrate tower** – Pollarding of a (usually dead) tree to a safe height that leaves part of the main stem as a deadwood habitat for invertebrate species.

**Occlusion/Occluded** – Normally used to describe the overgrowth of a wound. Also, immovable foreign objects in contact with a tree part can become encased or 'occluded' by the tree as it grows incrementally.

**Pathogen** - An agent that causes disease, especially a living microorganism such as a bacterium or fungus.

**Phototropic growth** – Growth responding to a light stimulus i.e. the sun. This can influence the form of a tree, particularly where other factors e.g. buildings or other trees, affect the amount/ direction light is received.

**Pollard** – The removal and subsequent regular re-removal of the crown of a tree above animal browsing height. Can be an effective method of controlling the size of trees in urban areas. This is ideally begun in the trees early stages and maintained throughout its life.

**Reaction wood** - Essentially additional wood laid down by the tree to compensate for structural defects such as cavities.

**Rhizosphere** - The rhizosphere is the narrow region of soil that is directly influenced by root secretions and associated soil microorganisms. In particular, mycorrhizal fungi form a symbiotic relationship with trees and assist in the assimilation of phosphates essential to the tree's health.

**Ring barking/Girdling** – the removal of bark around the entire circumference of a stem or branch, causing the death of all distal parts.

**Root Protection Area (RPA)** – Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m<sup>2</sup>.

**Scaffold limbs** - The main structural branches within the crown.

**Tree Removal & Protection Plan** – scale drawing prepared by an arboriculturist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the Arboricultural ~~method statement~~ [\(AMS& Vegetation Method Statement \(AVMS\)\)](#), which can be shown graphically.

**U.L.E** – 'Useful Life Expectancy' is an estimate based on currently known factors of the possible remaining life of the tree as an asset. AKA 'Estimated remaining contribution'.

**Veteran tree** – Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

**Vigour** - A general classification, as to the present and future potential growth and development of a tree. A comment regarding the health status of the tree specific to its species.

**White Rot** - A type of decay caused by certain species of fungi which results in the affected wood becoming flexible with little compressive strength.