Gatwick Airport Northern Runway Project

Environmental Statement
Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment – Part 6 – Clean Version

Book 5

VERSION: 4.0

DATE: AUGUST 2024

Application Document Ref: 5.3

PINS Reference Number: TR020005

APFP Regulations 5(2)(a) **Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

Appendix K:
Veteran Tree Identification Methodology

1 Introduction

1.1 This technical note has been prepared following a request from the Joint Local Authorities (JLAs), within the Principal Areas of Disagreement Summary Statement (PADSS) – Version 2 **[REP3-151],** for additional information about the methodology that was used for to identify veteran trees on the Project site.

1.2 Section 3 of **ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment** explains the surveys have been carried out both to inform the DCO application, as submitted, and subsequently to provide the JLAs with additional information. Surveyed trees were assessed in accordance with the requirements set out in BS 5837:2012 "Trees in Relation to Design, Demolition and Construction – Recommendations", by a fully qualified and experienced Arboriculturist.

1.3 The tree survey involved a visual inspection from the ground of individual specimens and groups of trees in order to record their amenity value, management recommendations and dimensions. Where observed, the general condition of all the trees has been noted.

1.4 During the survey, all information was digitally captured on site, using a tablet running Axciscape 4.07 software. This is a program specifically designed for arboricultural surveying, which allows trees to be located directly onto a digital copy of a sites topographical survey.

1.5 The survey assesses individual trees and groups of trees for quality and benefits within the context of proposed development. The quality of each tree or group of trees has been recorded by allocating it to one of four categories in general accordance with the requirements set out in BS 5837:2012:

- **A:** Trees of high quality and value
- **B:** Trees of moderate quality and value
- **C:** Trees of low quality and value
- **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

1.6 When assessing any tree's potential category, it's possible status as a veteran tree was also considered and they were recorded as individual trees. This is done following guidance from the Ancient Tree Forum and Natural England namely:

- 'Ancient and Other Veteran Trees: further guidance on management' Published by The Ancient Tree Forum and edited by David Lonsdale in 2013.
- 'Veteran Trees: A guide to good management (IN13)' published by Natural England on 1 February 2000.
- 'Ancient woodland, ancient trees and veteran trees: advice for making planning decisions' Published by Natural England and the Forestry Commission on 14 January 2022

1.7 Each of these guides has its own definition of what constitutes a "veteran tree". As there is **not** a clearly defined, universally accepted, measurable definition of what a "veteran tree" is, all guidance generally accepts that they are considered to be both large in girth and of a condition that indicates they are in decline.

1.8 It is important to identify Veteran trees, as they are usually of a high biodiversity, aesthetic or cultural interest and as such will require sensitive management and additional protection from any surrounding development.

1.9 In planning terms applicable to the Project, the National Networks National Policy Statement[1] (NNNPS) (March 2024) recognises the value of veteran trees in that it states:

'5.62 Ancient woodland and ancient and veteran trees are irreplaceable habitats. England's ancient woodlands and ancient and veteran trees support high levels of biodiversity. They are home to a quarter of England's priority species for conservation and once lost they cannot be recreated. They also deliver many ecosystem services including clean water and healthy soils, carbon storage, support for people's wellbeing and their long-standing cultural values. The Keepers of Time published in 2022 updates the government's policy to recognise the value of England's ancient and native woodlands and ancient and veteran trees. It restates the government's commitment to evaluate the threats facing these habitats and sets out updated principles and objectives to protect and improve these habitats for future generations.

5.63 The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats

[1] https://assets.publishing.service.gov.uk/media/65e9c5ac62ff48001a87b373/national-networks-national-policy-statement-web.pdf

including ancient woodland and ancient and veteran trees unless there are wholly exceptional reasons (for example, where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.'

1.10 Further to this, the Airports National Policy Statement[2] (ANPS) (June 2018) states the following in respect of veteran trees:

'5.103Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost, it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided.176 Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this.'

1.11 Natural England and the Forestry Commission's guidance (January 2022) on ancient woodland, ancient trees and veteran trees recommends the use of buffer zones to protect veteran trees:

'For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area.'[3]

2 Methodology for Veteran Tree Identification

2.1 When surveying potential Veteran trees, the two key features used to identify them are a large **Girth** & a declining **Condition** that rases there ecological value. These two attributes must both be present before it is classed as Veteran.

Girth

2.2 When considering a tree for veteran status we first look at the girth of the tree, as a large girth is the most obvious and measurable indicator of a tree being advanced in age.

[2] https://assets.publishing.service.gov.uk/media/5e2054fc40f0b65dbed71467/airports-nps-new-runway-capacity-and-infrastructure-at-airports-in-the-south-east-of-england-web-version.pdf
[3] https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences#use-of-buffer-zones

2.3 Where possible, the girth of a tree is also compared to the "Ancient Tree Size Criteria Table" (Lonsdale, ATF 2013, fig 1.3) (shown on **Figure 1** below) and which is recognised as the most universally adopted measurable way of identified a veteran tree:

Figure 1: Ancient Tree Size Criteria Table (Lonsdale, ATF 2013, Figure 1.3)

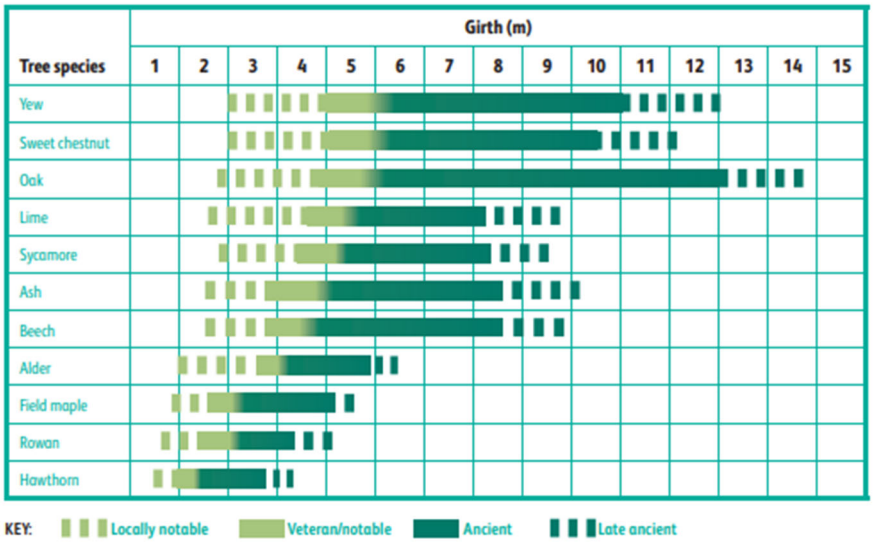

Fig 1.3: Chart of girth in relation to age and developmental classification of trees*

2.4 If the girth of a tree is considered large enough that the tree may be notable, then the condition of the tree is assessed to confirm whether or not the tree will be classed as a Veteran.

Condition

2.5 The main determining factor in whether or not a tree can be classed as a Veteran tree or not, is its physical condition. In 'Ancient and Other Veteran Trees: further guidance on management' David Lonsdale states that:

'In order to qualify as a veteran, the tree should show crown retrenchment and signs of decay in the trunk, branches or roots, such as exposed dead wood or fungal fruit bodies.' (Lonsdale, ATF 2013)

2.6 This makes the two most significant indicators of Veteran status:

- **Retrenchment:** The progressive deterioration of the outer crown of a tree through dieback and limb loss that reduces the overall height/ spread of the tree and increasing stability.
- **Decay:** When wood rots and decomposes; usually caused by a parasitic fungus or bacteria.

2.7 Both of these defects create good habitat, for things such as invertebrates or birds, raising its ecological value and giving a clear indicator of Veteran tree status.

2.8 A tree may still be considered for Veteran status even if it does not possess one or both of these features, if it still has a number of defects that would also be considered Veteran features, such as, but not limited to:

- A large quantity of deadwood in the crown
- Hollows/ Cracks without signs of decay
- Bark Loss
- Saprophytic Fungi
- Habitat spaces (such as woodpecker holes)
- Storm Damage

3 Conclusion

3.1 To summarise, the Applicant's approach to Veteran Tree identification can be summed up as a two-step process:

1) Identify potential Veteran trees by their size.
2) Note if they have retrenchment & decay **or** enough other significant defects to make them ecologically important.

3.2 If a tree meets both criteria then it would be assigned Veteran Status, if not its defects would still be noted, and its size may be mentioned as "Locally Notable".

3.3 While "Locally Notable" trees are not given the extra RPA buffer zone that a Veteran Tree is given, it will still normally be given Category A status and should be retained wherever possible.

3.4 This process follows the guidance, listed in section 1.5, to make our method as consistent as possible, but due to the individual nature of all trees this process still relies on the professional opinion of each surveyor and is not infallible, as recognised within the Ancient Tree Forum guidance:

'On the basis of the above general criteria, it is unlikely that all the participants in a survey would, without prompting or instruction, fully agree which trees should qualify for inclusion' (Lonsdale, ATF 2013)

Appendix L
Arboricultural Glossary

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 Method Statement (AMS) – 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 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, immoveable 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 m².

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), 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.