

**Fanellan Hub 400 kV Substation and
Converter Station
Environmental Impact Assessment Report
Volume 4 | Technical Appendices**

Appendix 15.1 – Survey Methodology

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1. APPENDIX 15.1: SURVEY METHODOLOGY

1.1 Introduction

1.1.1 Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study;
- A forestry desk study;
- A walkover survey of all arboricultural features within the study area; and
- A walkover survey of all forestry features within the study area.

1.2 Desk Study

1.2.1 The desk study for the Proposed Development was undertaken in October 2024.

1.2.2 The desk study reviewed existing arboricultural and forestry information available in the public domain. The desk-study has considered the following sources:

TPOs and Conservation Areas

1.2.3 Highland Council is responsible for implementing any legal controls imposed through TPOs and conservation areas within the study area. A review of their publicly accessible information shows there are no conservation areas¹ or TPOs² within the study area.

Ancient woodland

1.2.4 The potential presence of ancient within the study area was checked using the Scotland's Environment web-based map database³. The desk study established that woodland registered on the Ancient Woodland (Scotland) Inventory as semi-natural ancient woodland (Category 2a) is located within the middle of the study area.

Ancient and Veteran Trees

1.2.5 The potential presence of ancient and veteran trees within the study area was checked using the Woodland Trust's Ancient Tree Inventory⁴. The desk study established there are no ancient nor veteran trees registered within the study area.

Forestry Grants, Applications, Management Plans

1.2.6 The potential presence of any grants, applications or designations relating to managed forestry in the study area was checked using Scottish Forestry map viewer⁵. The desk study found numerous grants and felling applications within the study areas as well as two management plans.

¹ Highland Council, Conservation area maps [online]. Available at: https://www.highland.gov.uk/info/192/planning_-_listed_buildings_and_conservation_areas/167/conservation_areas/2 [Accessed 05 April 2023].

² Highland Council, Protected trees, TPOs map [online]. Available at: https://www.highland.gov.uk/info/1225/countryside_farming_and_wildlife/63/trees_woodland_and_forestry [Accessed 05 April 2023].

³ Scotland's environment web, Scotland's environment map [online] Available at: <https://map.environment.gov.scot/sewebmap/> > [Accessed 05 April 2023].

⁴ Ancient Tree Inventory, 2022. Ancient Tree Inventory [online] Available at: <https://ati.woodlandtrust.org.uk> [Accessed 05 April 2023].

⁵ Scottish Forestry (n.d.) Scottish Forestry Map View. Available at: <https://www.forestry.gov.scot/support-regulations/scottish-forestry-map-viewer>

1.3 Walkover Survey

1.3.1 A walkover survey was undertaken between the 4th and 13th June 2024. Additionally, the survey of trees at the Black Bridge associated works site was undertaken on 29th October 2024 and in accordance with the following criteria:

- Arboricultural features have been recorded as tree groups where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value;
- The trees have been visually inspected from ground level only;
- No tissue samples were taken nor was any internal investigation of the subject trees undertaken;
- Tree heights have been measured using a clinometer.
- Crown spreads have been estimated to the nearest 1m;
- Notes have been recorded where they relate to the quality of the arboricultural feature;
- Management recommendations have been provided where work is necessary for the abatement of a hazard which presents a high level of risk to persons or property. Such management recommendations have been communicated to the tree owner/manager separately from this report;
- Stem diameters have been measured in accordance with Annex C of BS 5837;
- Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other commonly encountered stems have been measured as per the guidance. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1; and
- By default, Root Protection Areas (RPAs) are calculated as an area equivalent to a circle with a radius 12 times the stem diameter and are capped at a distance of 15 metres.

1.4 Quality Assessment

1.4.1 The quality of arboricultural features has been determined in accordance with BS 5837 Table 1 a copy of which is provided in Figure B-1. The purpose of the quality assessment is to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development. For an arboricultural feature to be included within a particular quality category it should accord with the description provided.

1.4.2 The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority and are simply included to indicate the primary value associated with each surveyed item. Sub-categories 1, 2 and 3 are intended to reflect arboricultural, landscape and cultural values, respectively.

1.4.3 The quality and sub-category assigned to each arboricultural feature are identified within the Arboricultural Survey Schedule included in Appendix C of this report.

Table 1 – BS5837 - Cascade Chart for Tree Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan		
Trees unsuitable for retention (see Note)				
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	<ul style="list-style-type: none"> 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 <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>	See Table 2		
<p style="text-align: center;">1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation</p>				
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	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)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	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	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	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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	Trees with no material conservation or other cultural value	See Table 2

1.5 Notes and Limitations

- 1.5.1 Arboricultural survey data is of a preliminary nature and has been collected based on a walkover survey.
- 1.5.2 Only defects visible from the ground have been noted and each individual feature may not have been inspected closely due to access difficulties, the presence of dense ivy, other vegetation or safety constraints. Safety related features have not been recorded on the basis that the arboricultural features will be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.
- 1.5.3 Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes to the Site may render it invalid within a shorter timescale.
- 1.5.4 Records held on the Ancient Tree Inventory are collected on a voluntary basis, therefore the absence of records does not demonstrate the absence of ancient or veteran trees but may simply indicate a gap in recording coverage.
- 1.5.5 Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Walkover survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.
- 1.5.6 The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.