6 Trees & Woodland

EIA Addendum Update

This EIA Chapter has been updated to account for the proposed reduction of 22 accommodation units at Woodbank and deletion of Area 10.
Sections updated are:

- Woodlands – Tree Cover 6.4.1
- Table 6.4 Areas of Tree Cover
- Table 6.8 Assessment of Impact - Woodland: Assessment Score for Managed Woodland increased from Minor positive to Moderate Positive
- Compensatory Planting 6.8.5
- Table 6.9 Scale of Woodland Removal and Compensatory Planting

6.1 Introduction

6.1.1 This chapter of the EIAR provides an assessment of the likely significant effects from the proposed development on trees and woodland. The assessment is based on the characteristics of the site and surrounding area and the key parameters of the proposed development detailed in **Chapter 2 – Site and the Proposed Development**.

6.1.2 This chapter has been prepared by Julian A Morris Professional Tree Services, in line with best practice; a statement outlining the relevant expertise and qualifications of competent experts appointed to prepare this EIAR is provided in **Appendix 1.1 Project Team.**

6.1.3 The aims of this chapter are to identify the potential impacts on existing trees, groups of trees and woodland on the Site that would arise from the Proposed Development and to address the issues raised in the LLTNPA EIA Scoping Opinion. Mitigation measures are proposed and are presented in this chapter, together with a brief for compensatory planting or Woodland Management Plans for relevant parts of the Site.

6.1.4 This chapter is supported by the following figures and technical reports provided in **Appendices 6.1 to 6.7**:

- **Appendix 6.1 – Tree Cover Plans – National Forest Inventory, National Woodland Survey Scotland, Ancient Woodland Inventory, Existing Tree Cover**
- **Appendix 6.2 - Tree Preservation Order**;
- **Appendix 6.3 – Review of old mapping and Ancient Woodland Inventory (AWI)**;
- **Appendix 6.4 – Woodbank Tree Report**;
- **Appendix 6.5 - Summary of Impact Assessment**;
- **Appendix 6.6 – Retained and Replacement Woodland**, **Compensatory Planting**; **and**
- **Appendix 6.7 – Possible, retained and proposed tree cover.**

6.2 Policy Context, Legislation, Guidance and Standards

Legislation

6.2.1 The overarching legislative framework applicable to this EIA for the proposed development is outlined in **Chapter 4 – Legislative and Planning Policy Context**. In addition, legislation specifically relating to trees and woodlands subject to Tree Preservation Orders or requiring felling permissions comprise:

- Town & Country Planning Scotland Act 1997 Part VII **Chapter 1** as amended by the Planning Etc Scotland Act 2006;
- The Town and Country Planning (Tree Preservation Order and Trees in Conservation Areas) (Scotland) Regulations 2010;
- Forestry and Land Management (Scotland) Act 2018; and,
- The Forestry (Exemptions) (Scotland) Regulations 2019.

6.2.2 With potential woodland removal associated with the proposed development, any woodland removal assessed in this chapter does not come within the scope of the Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 as it would not comprise a 'forestry operation' as defined in Regulation 2.

Policy

6.2.3 The planning policy framework applicable to this EIA for the proposed development is outlined in **Chapter 4 – Legislative and Planning Policy Context**. In addition, Policy specifically relating to trees and woodlands subject to Tree preservation Orders or requiring felling permissions comprise:

- Planning Circular 1 2011 February 2011 'Tree Preservation Orders';
- The Scottish Government's Policy on Control of Woodland Removal 2009; and,
- National Planning Framework (draft, as laid in Parliament November 2023).

Guidance and Relevant Technical Standards

6.2.4 The following guidance and technical standards have informed this assessment:

- BS 5837:2012 "Trees in relation to design, demolition and construction – Recommendations";
- BS EN 17037:2018 "Daylight in buildings";
- Site Layout Planning for Daylight and Sunlight (2nd edition) - Building Research Establishment 2011;
- Arboricultural Association Guidance Note 12 - The use of cellular confinement systems near trees: A guide to good practice 2020;
- Field Surveys for Ancient Woodlands: Issues and Approaches - Hallam Environmental Consultants Ltd., Biodiversity and Landscape History Research Institute and Geography, Tourism and Environment Change Research Unit, Sheffield Hallam University October 2009;
- The identification of ancient woodland: demonstrating antiquity and continuity- issues and approaches - Hallam Environmental Consultants Ltd., Biodiversity and Landscape History Research Institute and Geography, Tourism and Environment Change Research Unit, Sheffield Hallam University October 2009;

- Scottish Government's policy on control of woodland removal: implementation guidance - February 2019;
- A guide to understanding the Scottish Ancient Woodland Inventory (AWI) - Scottish Natural Heritage (undated);
- Restoration of Native Woodland on Ancient Woodland Sites - Forestry Commission, Edinburgh 2003;
- Scottish Forestry - Scoping Opinion - February 2019;
- Planning for Ancient Woodland - Planner's Manual for Ancient 'Woodland and Veteran Trees October 2017 (Scottish edition) – Woodland Trust;
- Ancient And other veteran trees: further guidance on management (2017) Ancient Tree Forum;
- Ancient woodland indicator plants in Scotland (2009) - Carol L Crawford, Principal Ecologist and Chartered Forester, The Natural Resource Consultancy;
- Strachan, I.M. 2017. Manual of terrestrial EUNIS habitats in Scotland. Version 2. Scottish Natural Heritage Commissioned Report No. 766 and accompanying correspondence tables; and,
- Quantified Tree Risk Assessment User Manual v 5.2 2016.

6.3 Methodology

6.3.1 The environmental impact assessment must identify, describe, and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of the proposed development on the following factors:

- Population and human health;
- Biodiversity, and in particular species and habitats protected;
- Land, soil, water, air and climate; and,
- Material assets, cultural heritage and the landscape.

6.3.2 The effect of changes to tree cover, whether by woodlands, groups or individual trees may extend beyond the scope of an Environmental Impact Assessment. A significant benefit provided by trees is amenity, which does not come directly within the EIA remit but falls within the remit of the Planning Authority (Town & Country Planning Scotland Act 1997). It is generally accepted that amenity trees contribute to a sense of wellbeing if appropriately positioned and managed. These might be considered intangibly relevant to an EIA. However, trees and woodlands almost invariably and inseparably provide amenity and a range of other benefits. Some of these other benefits and the impact of their losses are assessed under other chapters, with considerable crossover to this one.

6.3.3 This chapter therefore primarily concentrates on the environmental impact on individual or groups of trees at a very local level, the overall cultural/heritage impact on ancient semi natural woodland and the loss of other forms of woodland that may give rise to the need for compensatory planting and/or justification in terms of public benefit under various policies. Appropriate cross-reference will be made to other chapters that deal directly or indirectly with the cumulative effects of trees and the wider habitat within woodlands.

6.3.4 The principal aspects considered within this assessment are:

- Review of existing Government published data on tree cover in the Study Area, principally the National Forestry Inventory, the Native Woodland Survey of Scotland and the Ancient Woodland Inventory;

- The extent and quality of any woodlands affected by, or likely to be affected by, the Proposed Development;
- The extent of individual trees and groups of trees affected by, or likely to be affected by, the Proposed Development;
- The design constraints presented by the trees, groups of trees and woodlands and how the constraints should be addressed at the detailed design stage;
- The extent to which areas identified in the Ancient Woodland Inventory ("AWI") and lying within or immediately adjacent to proposed development comprise ancient or quasi-ancient woodland habitat;
- The extent to which proposed development will result in or could contribute to the loss, enhancement or restoration of such habitats;
- The overall loss (extent and quality) of woodland cover;
- The nature and extent of any required compensatory planting;
- Potentially damaging effect on trees and woodlands of the construction and use of the development;
- Design considerations to minimise or avoid these effects by adequate stand-off distances and appropriate engineering solutions;
- Physical and procedural protective measures required during construction to avoid damage to trees and their rooting environment;
- Identifying the need for any explicit proactive ancient woodland restoration proposals; and,
- Terms for a Woodland Management Plan that would give effect to ongoing protection of sensitive woodland habitat and ongoing restoration proposals.

6.3.5 The assessment presented in this trees and woodland chapter has been prepared in accordance with the EIA Regulations.

6.3.6 The assessment of likely effects makes comparison with the baseline season December 2021 to March 2022 during which time the site surveys were carried out.

Assessment Consultations

6.3.7 In undertaking the assessment presented in this chapter, the following activities have been carried out:

EIA Screening and Scoping

6.3.8 The following comments particularly relevant to this chapter were received (27th July 2021) as part of a recent EIA screening by LLTNPA:

- "The Loch Lomond and The Trossachs National Park Authority Tree Preservation Order No.10 (2018) does include a section of the area within the EIA assessment area. This principally relates to the area of lochshore in the north west of the site;
- "As well as the various policies highlighted in the Scoping Report, impacts of the proposal in terms of the Scottish Government Control of Woodland Removal policy should form part of the considerations in the EIA;
- "It is also worth noting that Scottish Planning Policy 2014 (para 218, page 49) states that "Woodland Removal should only be permitted where it would achieve significant and clearly defined additional public benefits". The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the Control of Woodland Removal policy. This should be taken into account when

preparing development proposals. If the principle of woodland loss can be appropriately satisfied, then compensatory planting proposals to ensure no net loss of woodland and delivery at least of the equivalent woodland-related net public benefits should be detailed;

- "The woodland included in the proposed development site is a mix of ancient woodland and native woodland which are recorded on the Ancient Woodland Inventory and Native Woodland Survey of Scotland. A European Nature Information System (EUNIS) survey with target notes (in particular, ancient woodland indicators which may require specific timing for surveys) should be included and this information along with mapped information should inform the assessment of woodland loss / development impacts;

- "The previous glade survey had not considered the impact on ground flora of any proposed development. Such impacts should form part of the EIA assessment;

- "The woodlands within the development boundary form a key habitat link across the southern end of Loch Lomond and the EIA should include assessment of the impact of the development of this habitat link;

- "Outline woodland management proposals should be provided as part of the EIA. Given the prevalence to Ash dieback there should be consideration of maintaining sycamore as a component of the woodland as a suit of species to replace ash; and,

- "Scottish Forestry should be included as a key consultee."

6.3.9 Additional relevant comments were received from LLTNPA (17th November 2022):

- "Information to further help understand and substantiate the figures in Table 6-9 para 6.8.5 of the EIA Report (Volume 1) as it is not clear upon what basis the figures have been derived. We suggest a spatial plan (or plans) clearly showing and quantifying:

  a) The areas of proposed woodland loss and retention (informed by areas of proposed development); and

  b) The areas of proposed woodland net gain overlaid with the proposed development;

- A composite plan would help draw together the background sources of information, more clearly articulate the impact of the proposed development on woodland and how the impact is proposed to be mitigated;

- Review both the character and physical extent of the area of woodland at Woodbank House identified as B2 (Appendix 06.1 EIA Report Vol. 2) to ensure alignment with the submitted ecology and arboricultural reports along with the NWSS and National Forest Inventory maps;

- Area 10 - clarify whether there will be 'clear felling' or 'targeted tree loss' in this area and any consequent adjustment (or otherwise) in the overall woodland net loss/gain calculations presented within the EIA Report; and,

- On this last matter, it is noted that Area 10 has subsequently been removed from the Proposed Development, and no further consideration is given to it in this Chapter.

Post Scoping Consultation

6.3.10 Other than the request for supplementary information (17th November 2022) summarised in the preceding subparagraphs, no post scoping consultation has been undertaken. Cognisance is given to Scottish Forestry's Scoping Opinion on control of woodland removal dated February 2019.

Study Area

6.3.11 The Site is described as comprising of two main areas known as West Riverside and Woodbank House and a small third area to the north comprising the site of a former boathouse and slipway.

For the purpose of this chapter, the site is further subdivided into development Zones. For ease of reference these are the same as those used in the Parameters Plan (Revision M) included **as Appendix 2.1** in **Volume 2** and briefly described below.

6.3.12 *Zone A: Station Square (Micro-Brewery, Restaurant, Monorail Station, Performance Area and Budget Accommodation)* - Zone A lies immediately to the south of Zone B and comprises an area of gently mounded amenity grass and existing car-parking located between the River Leven, Balloch Road and Drumkinnon Wood. It is also the location of the 'Visit Scotland' information centre and Balloch Village ferry landing, which is used by Sweeney Cruises.

6.3.13 *Zone B: Riverfront (Monorail, Proposed Lodges and Associated Car Parking Along the River Leven)* - Zone B is bounded by Pier Road and then and the rear garden fence of housing along Clairinsh to the west and the River Leven to the east. Comprising relatively flat landform around 11m AOD, it includes the eastern part of Drumkinnon Wood, which contains mixed pioneer woodland species. A swathe of open grassland runs through the woodland.

6.3.14 *Zone C: Pierhead (Main Loch-Shore Development Comprising the Hotel and Visitor Centre, Monorail Station)* - Zone C comprises the area around the southern shore of Loch Lomond and to the east of the Loch Lomond Shores development (shops, restaurants and the 25m high Drumkinnon Tower housing the Sea Life centre). This zone also covers part of the area of land lying between Drumkinnon Bay and the River Leven, including a shingle beach, grassed picnic area and semi-mature woodland. The landform across much of the area is relatively flat and lies around 8m OD. The woodland is more undulating and rises to around 17m AOD.

6.3.15 *Zone D: Boathouse and Managed Woodland Area (New Boathouse on the Loch Shore)* - Zone D contains two distinct, physically separated, areas, (i) part of a small promontory on the south-western shore of the loch ('the Boathouse Area'), and (ii) an area of mainly woodland which wraps around the south western and southern edge of the main Loch Lomond Shores car park and is bounded by Old Luss Road and Ben Lomond Way ('the Managed Woodland Area'). The underlying landform is undulating and has been disturbed through man-made activities including the installation of a major gas pipeline and reduction in ground levels associated with construction of Ben Lomond Way.

6.3.16 *Zone E: 6.7 (Woodland Lodges and Countryside Lodges and Managed Woodland)* - Zone E is bounded by Old Luss Road to the east, agricultural land to the north and east, and a footpath and housing at Lower Stoneymollan Road to the south. The Site comprises the derelict former Woodbank House Hotel and associated out-buildings and gardens, including a walled garden. The Site also includes an area of grazing land to the north and east and a large area of sloping woodland to the west and north west.

6.3.17 The spatial scope of and Study Area adopted in this chapter was determined by the Site extent and any trees or woodlands close enough to it to have crowns or important rooting within the Site, as specified in BS5837 2012.

Desk Top Study and Information Sources

6.3.18 A review of relevant information, guidance and planning policy relating to the proposed development was undertaken to characterise the landscape and visual baseline of the site and surrounding area including:

- Loch Lomond and the Trossachs National Park - Local Development Plan;
- National Library of Scotland archive of historic maps and aerial photographs (online);
- Scottish Government's National Forestry Inventory (2019);
- Scottish Government's Native Woodland Survey of Scotland (current);
- Nature Scot's Ancient Woodland Inventory (1997); and,
- The Loch Lomond and The Trossachs National Park Authority Tree Preservation Order No.10 (2018).

6.3.19 In addition, at the time of year when the assessment was undertaken, it was not possible to document herbaceous plant coverage, and in particular those species that are widely accepted

as Ancient Woodland Indicator Species, and so regard was had to Lomond Banks Ecology Technical Report by Applied Ecology Ltd dated March 2022 that included the results of a habitat assessment in the core botanical season 2021.

Fieldwork

6.3.20 A detailed survey of each tree or group of trees in the west part of the Site (see below for definition and rationale for groups) was undertaken in December 2021, resulting in a full inventory and Tree Constraints Plan for the Woodbank House area.

6.3.21 A walkover survey in March 2022 was undertaken to record woodland types and species mix and the existence of any clearings or gaps and evidence or otherwise of antiquity, individual or populations of veteran or ancient trees, made or excavated ground, planting features or tree guards and trees, persistent tree/fungal associations.

Approach to Assessment

Hereinafter the Assessment is separated into two overlapping themes:

- Individual trees and groups of trees; and,
- Woodlands.

6.3.22 This separation is necessary to allow the impact on woodlands to be assessed and mitigated in substantially different ways than the impact on arboricultural trees or groups.

6.3.23 The first stage of the separation is to assess whether any tree within the Site is an individual, part of a group or part of an area of tree cover that comprises woodland. The second stage is to assess whether areas of tree cover that comprise woodland are within areas in the Ancient Woodland Inventory. The third stage is to assess the value of those woodlands in terms of significant biodiversity legacy associated with remnant ancient woodland communities. Finally, if the value falls below a level where no relict ancient woodland features are present and by the passage of time cannot reasonably be expected to re-establish themselves, these woodlands are to be treated as ordinary woodlands.

6.3.24 To accord with BS 5837:2012 “Trees in relation to design, demolition and construction – Recommendations”; Clause 4.4.2.3 the term “group” is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture).

6.3.25 However, the term ‘woodland’ is used in preference to ‘group’ where the woodland or group is large enough to be considered woodland for the purpose of the Government’s Control of Woodland Removal Policy. Although this is not defined in law, areas over 0.1 Hectare with 20% or more canopy cover could in certain circumstances be deemed as woodland (see 6.3.28 below).

6.3.26 The Assessment makes the preliminary precautionary assumption that all trees and groups of trees within areas interpreted as possible Ancient Semi Natural Woodland in the Ancient Woodland Inventory are ancient semi natural woodland, unless found to be otherwise either by being of very low or no relict ancient woodland habitat (in which case they are treated as ordinary ‘woodland’ for the purposes of assessment under the Control of Woodland Removal Policy) or by being so disaggregated that they can no longer be deemed ‘woodland’ (in which case they are treated as individual trees or groups).

6.3.27 An Ecological Assessment has been prepared and is included as **Chapter 5** of this EIA Report. This assessment included a combination of field study, such as a Phase 1 Habitat Survey and a desk-based assessment to identify the value of habitats within the Site, including woodland habitats.

6.3.28 A *Landscape and Visual Impact Assessment* has been prepared and is included as **Chapter 11** of this EIA Report. This assessment identifies the role that the trees, groups of trees and woodlands play in influencing the landscape character of the wider area. It also identifies areas of woodland that will play an important role in mitigating visual impacts of the proposed development on surrounding landscape and visual receptors.

Basis of Assessment of Woodlands - Extent of "Woodlands"

6.3.29 The widely applied definition in the UK Forestry Standard and the National Inventory of Woodlands and Trees combined is that woodland is "The part of woods and forests where the ecological condition is, or will be, strongly influenced by the tree canopy. This embraces land under stands of trees with a canopy cover of at least 20%, or having the potential to achieve this, including integral open space, and including felled areas that are awaiting restocking. The minimum area is 0.1 ha." Delineation is based wherever possible on substantial physical boundaries (particularly long established ones) (see 6.4 below).

6.3.30 Impact will be assessed as a product of sensitivity of receptors and the magnitude of change to give an overall significance of effects. The following matrix-based approach will be used.

Basis of Assessment of Woodlands – Ancient and Other Woodland Values

6.3.31 The basis for assessing the value of ancient or quasi-ancient woodland and other (ordinary) woodland values are set out below at 6.4.12 *et seq*. where it is more appropriate to do so after considering together the implications of the Government's Control of Woodland Policy and the Ancient Woodland Inventory.

Basis for Assessing Significance of Effects

6.3.32 **Table 6-1** sets out the criteria for assessing the sensitivity of receptors to change.

Table 6-1: Criteria for Assessing Receptor Sensitivity

Receptor Sensitivity	Description
Low	Receptors with a high capacity to accommodate change, low value or poor condition and no significant uses.
Medium	Receptors with a moderate capacity to accommodate change, medium value or condition and limited use.
High	Receptors with a low capacity to accommodate change, high value or condition and significant use.

6.3.33 **Table 6-2** sets out the criteria for assessing the likely magnitude of the change due to the proposed development upon identified sensitive receptors.

Table 6-2: Criteria for Assessing Magnitude of Change

Substantial	Negative - Permanent impact(s) resulting in the total loss the integrity of the Site or conservation status of a habitat, species assemblage/community population or group. Positive - Significant improvements of resource quality, restoration and enhancement on an extensive scale, significant improvement of attribute quality. Significant improvement in Local Green Infrastructure.
High	Negative - Permanent or long-term impact(s) on the integrity of the Site or conservation status of a habitat, species assemblage/community population or group, which is likely to threaten its sustainability. Positive - Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality.
Moderate	Negative - Permanent or long-term impact(s) on the integrity of the Site or conservation status of a habitat, species assemblage/community population or group, which is unlikely to threaten its sustainability. Positive - Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Negative - Short term and reversible impact(s) on the integrity of the Site or conservation status of a habitat, species assemblage/community

	population or group that is within the range of variation normally experienced between years. Positive - Minor benefit to, or addition of, one or more key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible/ Neutral	Negative - Short term and reversible impact that is within the range of annual variation. Positive - Very minor benefit to or positive addition of one or more characteristics, features or elements. Neutral – Negative change offset equally by positive change

6.3.34 The criteria set out in **Table 6-1** and **Table 6-2** have been used to develop a simple matrix to assess the significance of likely effects of the proposed development on the tree and woodland environment, as shown in **Table 6-3** below.

Table 6-3: Criteria for Assessing Significance of Effects

Sensitivity of Receptor	Magnitude of Change			
	Substantial	**Moderate**	**Slight**	**Negligible/None**
High	Major	Major	Moderate	Negligible/Neutral
Medium	Major	Moderate	Minor	Negligible/Neutral
Low	Moderate	Minor	Minor	Negligible/Neutral

6.3.35 In all cases the effect of woodland, group and tree removals or damage without mitigation is to be assessed as ‘negative’. The net result after embedded and additional mitigation can be considered separately, and may be ‘positive’, ‘neutral’ or ‘negative’.

6.4 Baseline Conditions

Woodlands – Tree Cover

6.4.1 The main areas of tree cover within the Site are described in **Table 6-4** below and marked on the Tree Cover plans at **Appendix 6.1.4.** To provide an approach to defining the extent of tree cover that is consistent with the National Forest Inventory, the Native Woodland Survey and the Ancient Woodland Inventory, substantial physical boundaries (particularly long established ones) shown on current OS Mastermap scale mapping have been used to avoid uncertainty in areas where crowns encroach over adjacent land. This yields areas that represent land use rather than canopy coverage and is therefore consistent also with delineations in the Development Plan. Significant discrepancies were noted between the surveyed tree cover and the extent of the National Forest Inventory and Native Woodland Survey. This can be understood on a few main principles (i) the Inventory and Survey were and are heavily reliant on aerial photography that mask physical boundaries where there are overhanging canopies (ii) the Inventory and the Survey for the same reason and due to limitations in distinction between vegetation types within parcels do not reliably exclude areas of dense shrub cover such as Rhododendron, Cherry/Portuguese Laurel and others (iii) areas with less than 20% cover that come withing the technical definition of ‘woodland' but are not actually woodland are included in the Inventory and the Survey for precautionary and future monitoring reasons (iv) clearings, rides, walkways, cycleways and riparian edges within parcels are included even where there are significant absences of tree cover at ground level.

Table 6-4: Areas of Tree Cover

Areas of Tree Cover	'Parameters Plan' Zone	Description	Area (Ha)
A	**A**	**Station Area**	
n/a	n/a	No woodland cover	
B	**B**	**Riverside Area**	
B.1	B	Mixed native and naturalised deciduous, dominated by early mature to mature birch.	0.07
B.2	B	Mixed native and naturalised deciduous, dominated by early mature to mature birch. Occasional larger early mature sycamore and mature goat willow.	1.39
B.3	B	Mixed native and naturalised deciduous, dominated by early mature to mature birch.	0.41
	B		
B.4	B	Mixed native and naturalized deciduous, dominated by birch and sycamore, occasional mature specimens.	0.85
B.5	B	Mixed native deciduous dominated by early mature birch.	0.18
B.6	B	Mixed dense native deciduous dominated by young and semi mature alder and birch.	0.34
B.7	B	Mixed native deciduous dominated by early mature birch and occasional larger sycamore.	0.07
B.8	B	Mixed native and naturalised deciduous, with roadside edge rich in hazel. Evidence of planted origin. Semi mature and early mature sycamore, willow, birch and slender ash. Occasional cherry and some elm to north. Occasional clearings or grass and bluebell ground layer.	0.73
C	**C**	**Pierhead Area**	
C.1	C	Artificial mound. Mixed native deciduous and evergreen, young, ridge-and-furrow planted. Pine, alder, willow, birch, hazel and other.	0.27
C.2	C	Artificial mound. Mixed native deciduous and evergreen, young, ridge-and-furrow planted. Pine, alder, willow, birch, hazel and other.	0.56
D	**D**	**Boathouse Area and Managed Woodland**	
D.1 and D.2	D	Road edge with mounded material planted with early mature Larch to 20m height and occasional Douglas Fir.	0.24

Areas of Tree Cover	'Parameters Plan' Zone	Description	Area (Ha)
		UNAFFECTED BY DEVELOPMENT PROPOSALS.	
D.3	D	Mixed dense semi-mature native broadleaf (ash, rowan, hazel, willow, birch cherry, oak), planted, with occasional tree guards still in place. Bounded on roadside hawthorn and young but established beech hedging. UNAFFECTED BY DEVELOPMENT PROPOSALS.	0.58
D.4	D	Mixed dense semi-mature native broadleaf (ash, rowan, hazel, willow, birch cherry, oak), planted, with occasional tree guards still in place. Bounded on roadside and NW by hawthorn and young but established beech hedging. Split by 10m wide tree-free gap for access to high pressure pipeline. A.2.2 and a.2.3 notionally in Ancient Woodland Inventory but trees are young to semi mature only. Small area of Japanese Knotweed noted. UNAFFECTED BY DEVELOPMENT PROPOSALS.	0.14
Boathouse area	D	Mixed native and naturalized broadleaf regeneration and scrub. Not woodland.	<0.02
E	**E**	**Woodbank Area**	
E.1	E	Remnant of line of planted beech trees	0.08
E.2	E	Mixed mainly non-native deciduous with occasional ornamental non-native conifers and a few yews. Dominated numerically by semi mature sycamore, with early mature oak and semi-mature ash. On slopes, occasionally dense understory of bamboo, rhododendron, cherry laurel, Portuguese laurel and other non-native shrubs. Natural glades either absent or colonized by bamboo. More fully described in tree survey report of December 2022.	1.16
E.3	E	Predominantly ornamental species including Lawsons cypress, lime, giant redwood and spruce. Understory or interspersal of evergreen shrubs. More fully described in tree survey report of December 2022.	0.21

Areas of Tree Cover	'Parameters Plan' Zone	Description	Area (Ha)
E.4	E	Scrubby mixed deciduous native trees (dominated by willow and birch) on brownfield and disturbed ground including former walled garden and greenhouses. More fully described in tree survey report of December 2022.	0.37

6.4.2 All other areas of tree cover within the Site were found to be too small or of less than 20% canopy cover and therefore being outwith the adopted definition of woodland. Hereinafter trees in these areas are treated as individuals or groups.

6.4.3 The Site includes parts of two areas identified in the AWI as provisionally being Long-established woodlands of plantation origin (LEPO), interpreted as plantation from maps of 1750 (1b1) or 1860 (2b) and continuously wooded since. The Inventory reasons that many sites of this history have developed semi-natural characteristics, especially the oldest ones, which may be as rich as Ancient Woodland.

6.4.4 The Boathouse Area of Parameter Plan Zone D is within a much larger area that is subject to the "Loch Lomond and The Trossachs National Park Authority Tree Preservation Order Number 10 of 2018" (**Appendix 6.2**). The Order is a 'Woodland' type that protects trees present not just at the time the Order was made but also any subsequent planted or naturally regenerated trees. The Order notionally comprises woodland of Alder (*Alnus spp*), Ash (*Fraxinus excelsior*), Beech (*Fagus sylvatica*), Birch spp (*Betula spp*), Hawthorn (*Crataegus monogyna*), Holly (*Ilex aquifolium*), Pine (*Pinus spp*) Oak (*Quercus spp*), Spruce (*Picea spp*), Sycamore (*Acer pseudoplatanus*), Western Hemlock (*Tsuga hetrophylla*) and Willow spp (*Salix spp*).

6.4.5 Some of these species are present within the Boathouse Area, in the form of coppice-style young and semi-mature trees.

Woodlands - Control of Woodland Removal Policy

6.4.6 Scottish Planning Policy 2020 (SPP) states that:

"…the planning system should… protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods (paragraph 194)."

6.4.7 Giving effect to this, the Government's Control of Woodland Removal Policy sets out two scenarios regarding woodland removal: first, woodland removal without a requirement for compensatory planting, and secondly, woodland removal with a need for compensatory planting. The guiding principles for the acceptability or otherwise of woodland removal most relevant to the Site and the Proposal are as follows:

- There is a strong presumption in favour of protecting Scotland's woodland resources;
- Woodland removal should be allowed only where it would achieve significant and clearly defined additional public benefits. In appropriate cases a proposal for compensatory planting may form part of this balance;
- Approval for woodland removal should be conditional on the undertaking of actions to ensure full delivery of the defined additional public benefits;
- Planning conditions and agreements are used to mitigate the environmental impacts arising from development and Forestry Commission Scotland will also encourage their application to development-related woodland removal; and,
- Where felling is permitted but woodland removal is not supported, conditions conducive to woodland regeneration should be maintained through adherence to good forestry practice as defined in the UK Forestry Standard.

6.4.8 In the Policy, woodland removal, without a requirement for compensatory planting, is most likely to be appropriate where it would contribute significantly to:

- Enhancing priority habitats and their connectivity;
- Enhancing populations of priority species;
- Enhancing nationally important landscapes, designated historic environments and geological Sites of Special Scientific Interest (SSSI);
- Improving conservation of water or soil resources; or,
- Public safety.

6.4.9 The Policy states that "Woodland removal, with compensatory planting, is most likely to be appropriate where it would contribute significantly to:

- Helping Scotland mitigate and adapt to climate change;
- Enhancing sustainable economic growth or rural/community development;
- Supporting Scotland as a tourist destination;
- Encouraging recreational activities and public enjoyment of the
- Outdoor environment;
- Reducing natural threats to forests or other land; or,
- Increasing the social, economic or environmental quality of Scotland's woodland cover."

6.4.10 As well as demonstrating the mitigation against tree losses or damage (including within woodlands), this chapter must therefore also identify the general quantum of woodland losses within the context of a PPiP so that compensatory replanting can be proposed and secured through the use of appropriate planning conditions.

6.4.11 An assessment of additional public benefits and significant contributions to other public interest factors under the Policy is dealt with in other chapters of the EIA.

Woodlands - Basis of Ancient Woodland Values

6.4.12 In the Policy there will be a strong presumption against removing the several types of woodland including in particular (i) ancient semi-natural woodland or (ii) woodlands listed as 'Plantations on Ancient Woodland Sites' (PAWS).

6.4.13 The Policy documents explain that Ancient Woods are important because:

- They include all remnants of Scotland's original woodland; their flora and fauna may preserve elements of the natural composition of the original Atlantic forests;
- They usually have much richer wildlife than that of more recent woods;
- They preserve the integrity of soil ecological processes and associated biodiversity;
- Some have been managed by traditional methods for centuries and demonstrate an enduring relationship between people and nature;
- Woods and veteran trees are ancient monuments whose value to the local community and historians may be as great as that of the older buildings in a parish; and,
- Once destroyed, they cannot be recreated.

6.4.14 Areas within the Site are included in NatureScot's Ancient Woodland Inventory ("AWI"). The Ancient Woodland Inventory (AWI) is a provisional guide to the location of Ancient Woodland in Scotland. Some of these areas might therefore be ancient semi-natural woodland affected by the Policy.

6.4.15 The Inventory cautions that the AWI was derived from the Roy maps (c1750) and the OS 1st edition (c1860). It is not definitive and should be used with care; when evaluating woods it is important to:

- Examine the site on the ground, looking for archaeological, biological and other indicators of antiquity and of its current biodiversity value;
- Examine old maps; the OS 1st edition and Roy maps are available on www.nls.uk. Woods not shown on the AWI, but present on the historic maps, are likely to be ancient and should be treated as such unless evidence is available to the contrary; and,
- Seek specialist advice if in doubt.

6.4.16 This approach is echoed in the Woodland Trust document "Planning for Ancient Woodland - Planner's Manual for Ancient 'Woodland and Veteran Trees October 2017 (Scottish edition)"

6.4.17 This chapter must therefore assess whether the provisionally identified areas (or parts thereof) have archaeological, biological and other indicators of antiquity and of current biodiversity value that indicate remaining Ancient Woodland values that should be preserved or, where reasonably possible, restored.

6.4.18 Restoration does not mean replanting with native species, although that may form part of a restoration proposal. Restoration involves re-establishing a functioning native woodland ecosystem by:

- Securing features from the former ancient semi-natural woodland;
- Removing introduced species of trees, shrubs, and other plants;
- Encouraging the re-establishment of native species; and,
- Initiating or enhancing ecological processes which may be absent or damaged (such as appropriate grazing regimes).

6.4.19 In most circumstances the aim of restoration will be to create the conditions needed to promote the development of native woodland over the longer term. Complete reinstatement of past conditions is not a realistic target.

6.4.20 If no relict ancient woodland features are present and by the passage of time cannot reasonably be expected to re-establish themselves, then woodland removal should be assessed under the Policy as 'more appropriate when accompanied by compensatory replanting' rather than a 'presumption against Ancient Woodland loss'.

6.4.21 In all other cases an assessment of the value of the ancient woodland habitat is required. The value combines the evidence-based assessment of several features and components of the woodland which together indicate quality, sensitivity and probability of relict ancient woodland characteristics and their potential for restoration.

6.4.22 National or local significance is not of overriding importance, since all ancient semi natural woodlands are considered equally important, distinguished largely by their quality. Following the advice of NatureScot, all Ancient Semi Natural Woodland sites will be considered to be Regional/Local importance.

6.4.23 **Table 6-5** (below) sets out the criteria of ancient woodland value to be applied to each area within the Ancient Woodland Inventory shapes.

Table 6-5: Ancient Woodland Value

Value	Features / Components of Woodland
High	▪ The woodland has significant biodiversity value and quality including cultural/historic heritage values;

Value	Features / Components of Woodland
	■ The majority of trees are native, in a wide range of life stages, statures and conditions and dominated by climax species; ■ Significant numbers of veteran and /or ancient trees supporting continuity of deadwood and animal habitat are present; ■ Veteran and/or ancient trees are present which are providing additional habitats including sustainable fungal associations; ■ No / low, cover and numbers of eradicable, invasive species; ■ A high number of Ancient Woodland Vascular Plant indicator species are present; ■ Close correlation with a relevant National Vegetation (or equivalent EUNIS) Classification/Biodiversity Action Plan habitat(s); ■ Predominantly undisturbed soils with evolved mycorrhizal associations (symbiotic relationship between fungi and plants); ■ Map and aerial photographic evidence of continuity of tree cover since at least 1860; ■ No or nearly no gaps in tree cover; ■ Recent survey-based evidence will generally correspond with existing AWI interpretations such as Ancient Semi Natural Woodland or Long-Established Plantation Origin; and, ■ No or minimal need for active restoration.
Medium	■ The woodland has moderate biodiversity value and quality including cultural/historic values; ■ Significant proportions of non-native or non-naturalised tree species are established. Restricted age classes of trees are represented and exclude 'late-mature'; ■ The trees are typically of fair quality. There are few veteran and no ancient trees present, providing limited additional deadwood and animal habitats and only primitive fungal associations; ■ Cover and numbers of established invasive species already influencing ecology and habitats, eradicable with some difficulty; ■ Only a small number of Ancient Woodland Vascular Plant indicator species present; ■ No or weak correlation with a relevant National Vegetation (or equivalent EUNIS) Classification/Biodiversity Action Plan habitat(s); ■ Soils are at least partly disturbed or drained and may be acidified by conifer cover. Limited fungal associations; ■ Map and aerial photographic evidence of only short breaks in continuity of tree cover since at least 1860; ■ No or nearly no current gaps in tree cover; ■ Recent survey-based evidence will correspond only weakly with existing AWI interpretations such as Ancient Semi Natural Woodland or Long-Established Plantation Origin; ■ Several and/or moderately large gaps in tree cover; and, ■ Overall site rating for restoration of native or ancient woodland sites - Medium.
Low	■ The woodland comprises wholly or mainly non-native or non-naturalised tree species (or a single species); ■ Trees are of a full range of quality and dominated by a single age class. Few or no veteran and /or ancient trees supporting continuity of deadwood and animal habitat are present; ■ Invasive species established and having displaced native habitat and only eradicable with great difficulty; ■ There are no Ancient Woodland Vascular Plant indicator species present; ■ No correlation with a relevant National Vegetation (or equivalent EUNIS) Classification/Biodiversity Action Plan habitat(s); ■ Soils have been disturbed by ridge and furrow ploughing or drainage and may be acidified and toxified by conifer cover. Weak or no mycorrhizal associations; ■ Map and aerial photographic evidence of long breaks in continuity of tree cover since at least 1860; ■ Many and/or large gaps in tree cover, or currently no tree cover; and, ■ Overall site rating for restoration of native or ancient woodland sites – Low.

Woodlands - Basis of Other (Ordinary) Woodland Values

6.4.24 Other woodland value will be assessed on a similar basis but on a reduced set of criteria. **Table 6-6** (below) sets out the criteria of other woodland value to be applied to each area of tree cover outwith the AWI areas.

Table 6-6: Other Woodland Value

Value	Features / Components of Woodland
High	■ The woodland has significant biodiversity value and stock quality; ■ Tree populations are established and independent with high wind firmness; ■ The majority of trees are native or with proven resilience to climate change and endemic pests and diseases; ■ Significant numbers of trees features supporting continuity of deadwood and animal habitat are present; ■ No / low, cover and numbers of eradicable, invasive species; ■ Close correlation with a relevant National Vegetation (or equivalent EUNIS) Classification/Biodiversity Action Plan habitat(s), even if artificially created; ■ Terrain and facilities make public access easy for most people; ■ Many/Very Many potential users nearby; ■ Prominent/Very Prominent; ■ Little surrounding woodland; and, ■ Large size.
Medium	■ The woodland has moderate biodiversity value and stock quality; ■ Tree populations are becoming established and independent but prone to peripheral storm damage; ■ About half the trees are native or with proven resilience to climate change and endemic pests and diseases; ■ A few tree features supporting continuity of deadwood and animal habitat are present; ■ Some, eradicable, invasive species present; ■ Moderate correlation with a relevant National Vegetation (or equivalent EUNIS) Classification/Biodiversity Action Plan habitat(s), even if artificially created; ■ Terrain and facilities limit public access; ■ Some potential users nearby; ■ Visible but not prominent; ■ Surrounding area 5 to 25% wooded; and, ■ Medium/Small size.
Low	■ The woodland has low biodiversity value and stock quality; ■ Tree populations are not yet established or independent and are prone to windthrow; ■ Few of the trees are native and are unlikely to be resilient to climate change or endemic pests and diseases; ■ Few or no trees features supporting continuity of deadwood and animal habitat; ■ Significant level and numbers of invasive species, eradicable with difficulty; ■ No correlation with a relevant National Vegetation (or equivalent EUNIS) Classification/Biodiversity Action Plan habitat(s); ■ Terrain and facilities make public access difficult for most people; ■ Few potential users nearby; ■ Secluded; ■ Much surrounding woodland; and, ■ Very small.

Woodlands - Tree Preservation Order Amenity

6.4.25 LLTNPA Tree Preservation Order Number 10 of 2018 covers a large area to the north west of Lomond Shores and includes the Boathouse Area. A copy of the Order is provided at **Appendix 6.2.**

6.4.26 In making the Order in 2018, LLTNPA stated that “the area affected by this Order forms part of a larger woodland linking the loch shore to the wider woodland running south and forms a woodland habitat corridor linking the loch shore with the woodlands to the north and west. The woodland also creates a transition from the urban setting of Lomond Shores into the listed buildings of Cameron House and its formal grounds.” It considered it expedient to make the Order to protect an area of woodland between Lomond Shores and Cameron due to its contribution to the amenity of the Drumkinnon Bay area.

6.4.27 There is therefore a presumption against the removal of trees in this area without the express written permission of the Planning Authority. The Order states that there is an exemption from the requirement for permission where the cutting down, topping, lopping or uprooting of a tree where that work is required to enable a person to carry out works to implement a planning permission (other than an outline planning permission or planning permission in principle).

6.4.28 The grant of Planning Permission in Principle would not allow development of the Boathouse Area until detailed planning permission was subsequently granted, and which could expressly or implicitly include tree works on the Boathouse Area site. The importance of the woodland to the amenity of the area is underlined by the Order. However, only part of the whole promontory is in the Site, and the acceptability of development of the Boathouse Area may depend on the provision of tree planting within it to contribute to and accelerate the consolidation of tree amenity on the whole promontory.

Woodlands - Ancient Woodland Quality Assessment

6.4.29 A combination of desk-based assessment and site survey has been undertaken to assess the AWI extents and their surrounding context and the current condition and value of woodland areas on the Site.

6.4.30 Trees within the AWI extents may comprise individual trees, groups or woodland. If these have been found to comprise the last of these, a more detailed assessment of their ancient woodland character is required. Otherwise, they are addressed and individuals or groups with negligible associated ancient woodland habitat or restoration potential, which in accordance with the Control of Woodland Removal Policy should be assessed as 'more appropriate when accompanied by compensatory replanting' rather than as 'presumption against Ancient Woodland loss'.

6.4.31 Using data from a habitat survey of the Site for **Chapter 5** of the EIAR (**Appendix 5.1**), a comparison was made between the flora present on the parts of the site covered by the Ancient Woodland Inventory and the published list of 'Ancient woodland indicator plants in Scotland'. With one sub-area exception no ancient woodland indicator species were present.

6.4.32 The exception is the most north westerly part of the Woodbank area, where ancient woodland indicator species Wood Sorrel (*Oxalis acetosa*), Pignut (*Conopodium majus)*, Common Figwort (*Scrophularia nodosa*) and Wild Garlic (*Allium ursinum*) were noted. No woody perennial indicator species were noted.

6.4.33 Using data from the tree survey, woodland walkover and other available sources, a comparison was made between the flora present and the European Nature Information System (EUNIS) list of habitats, cross-referenced to the National Vegetation Classification (superseded by EUNIS).

6.4.34 No correspondence was found between the tree cover within the AWI areas and any one EUNIS habitat type. During the comparison it was noted that EUNIS woodland types with climax species other than those present on the Site could largely be dismissed with the exception of those dominated by Pedunculate Oak (*Quercus robur*), Ash (*Fraxinus excelsior*) and Beech (*Fagus sylvatica*).

6.4.35 The first two mentioned have no EUNIS habitats that resemble the AWI parts of the site, through a combination of dilution of the climax species by incongruent species (Sycamore (*Acer pseudoplatanus*) in particular) and the absence of essential EUNIS community species.

6.4.36 The last mentioned is noted in the EUNIS list as only ever found of plantation origin and therefore conflicting with the principle of relict ancient woodland habitat. Beech habitat type in Scotland is restricted to areas south of the Southern Uplands.

6.4.37 An analysis of old maps and aerial photography is provided within **Appendix 6.3**.

6.4.38 This indicates that the AWI shape around Woodbank House is approximate and wrongly placed, and thus suggests historic tree cover within the field area and to the south of the site, where historic mapping counter-indicates no tree cover. Progressive development of Woodbank House and its ornamental and horticultural facilities shows significant clearance, man made changes in landform and path developments that together replaced about 55% of the previous land use on the site and within the corrected position of the AWI shape. The mapping suggests changes in tree mix, reduction in cover and periods of shrub or small tree cover in large parts of the remainder.

6.4.39 The detailed tree survey of the Woodbank area (see below) and the walkover survey of the remaining parts of the Site have yielded other indications of continuity, discontinuity, fragmentation, changes in character and past disruptions. This is summarised at **Appendix 6.4.**

6.4.40 Additional analysis indicates that there has been a break in tree cover at the Boathouse area from at least 1914 until 1960, and the walkover survey indicated that there were only young to

semi-mature trees present over less than half of it, which further suggests that the break in cover may have been considerably longer.

6.4.41 **Table 6-7** (below) gives the results of the assessment of ancient woodland value for each of the areas by criteria and overall.

Table 6-7: Assessment of Ancient Woodland Value

Area	E	E.1	E.2	E.3	E.4
Biodiversity		L	M	L	M
Native Trees		L	M	L	M
Age Range		L	L	M	L
Condition Range		M	L	L	M
Ancient/Veteran Trees		L	L	L	L
No Invasive Species		H	H	H	M
Ancient Woodland Indicator Species		L	M	L	L
EUNIS/NVC Community Match		L	L	L	L
Extent Undisturbed		L	M	M	L
Continuity		H	M	M	L
Canopy Cover		H	H	H	M
Restoration Potential		L	M	L	L
Over-All Ancient Woodland Value		**L**	**M**	**L**	**L**

L = Low; M = Medium; H = High

6.4.42 This matrix is not used as a prescriptive tool or arithmetically. The methodology and analysis of potential effects for any particular area of woodland relies partly on the exercise of professional judgement. Descriptions of effects, especially those considered significant in EIA terms, are described in narrative text.

6.4.43 The conclusion is reached that, broadly speaking, in the Woodbank AWI area there is a range of values from Low in the Southern half and Medium in the Northern half, while in the Staff Area AWI area there is predominantly Low Value. The value of the Boathouse Area is assessed as Low.

Trees and Groups

6.4.44 For the Woodbank House area, a *Tree Survey* has been undertaken in accordance with BS 5837: 2012. This identified trees and tree groups in the Site, noting their locations, species, dimensions, life stage, estimated remaining amenity contribution and condition. The constraints above and below ground that they would pose to any form of development have been established and plotted. Trees have been categorised as either Category A, B, C or U. **Table 1** of BS5837:2012 defines these categories, summarised as follows:

- Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years;
- Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years;
- 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 150mm; and,
- 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.

6.4.45 The results of the tree survey, further description of these categories and the methodology for assessing them is provided within BS5837 2012 and **Appendix 5** of the **Tree Survey Report** (**Appendix 6.4**).

6.4.46 Although much of the Woodbank House area is classified as 'woodland', individual trees in the woodlands and individual trees and groups out with the woodland areas have also been

identified and categorised and their spatial constraints established. Because these are not 'woodland 'in the ordinary meaning of the word, this has resulted in a significant contrast between the delineated 'woodland' areas in the National Forest Inventory/Native Woodland Survey and the areas of tree cover recorded in Table 6.4 and Appendix 6.1.4.

6.4.47 At the detailed design stage, a similar survey for the remaining areas would be undertaken in accordance with BS 5837 2012 to identify and categorise individual trees and groups and establish their spatial constraints. Corresponding tree positions would be accurately and precisely established using existing and supplementary topographic survey data.

6.4.48 The key spatial constraints for trees, identified and established by the BS 5837 2012 surveys are:

- Root protection areas;
- Crown spreads;
- Crown clear heights; and
- Height and direction of first significant branch.
- Supplemented where necessary by:
  - Shadowing and shading; and,
  - Risk or perceived risk from falling trees.

6.4.49 These last two constraints can give rise to pressure for pruning or removal of trees relative to permanent dwellings and gardens but are either less relevant or not relevant to holiday accommodation and non-residential buildings, where proximity to trees is widely perceived as a benefit. They cannot be addressed by BS5837 2012 but where design may be sensitive to them an assessment can be provided in accordance with BS EN17037 2018 and accompanying implementation guidance and using an established system of objective risk assessment such as Quantified Tree Risk Assessment ("QTRA"). The latter may then form part of a regular review of tree risk within a Tree and Woodland Management Plan.

6.5 Embedded Mitigation

6.5.1 Mitigation measures are designed to avoid, reduce or offset adverse effects arising from the Proposals. By taking a flexible approach to design and building a degree of mitigation into the design through an iterative process from the outset, the overall scale of adverse effects can be reduced.

Design Stage

6.5.2 Detailed design will use up-to-date tree survey data, topographic positioning and tree constraints data to:

- Prevent the unavoidable loss of Category A and B trees;
- Minimise the loss of Category C or Category U trees;
- Make allowance for viable space for replacement individual replacement tree planting;
- Avoid damage to underground constraints, particularly by avoiding construction and construction activities within the root protection area (RPA) of trees including the use of no-compaction no-dig cellular confinement systems (Arboricultural Association Guidance Note 12 - see References) and other specialised techniques and products where minor incursions into root protection areas are necessary;
- Avoid or minimise the need for crown lifting or reduction by making use of areas beneath clear crown heights and significant branches;

- Following the published recommendations of the Ancient Tree Forum, additional rooting volume will be protected for any veteran trees that are identified at the survey stage; and,

- Draw up a programme of systematic eradication or control of invasive non-native species; methodologies must reflect and avoid the risk of collateral damage to trees and native or naturalised species, especially in areas of relict ancient woodland habitat.

6.5.3 The detailed design will then be assessed for impact on trees, with further design iterations until the impacts are deemed acceptable.

6.5.4 An Arboricultural Impact Assessment will be prepared in accordance with BS5837 2012 for any detailed application. The Assessment will include Tree Protection Plans and Arboricultural Method Statements setting out the extent of construction exclusion zones, precautionary zones, special procedures, barrier types and positions and the timing of protection measures and arboricultural supervision and monitoring before, during and after construction.

Additional Mitigation Measures in Ancient Woodland Areas

6.5.5 In addition (where appropriate), within areas of any residual ancient woodland habitat the following measures will be applied:

- A Draft Woodland Management Plan will be produced to complement an inform detailed design work, by setting out the vision for the long-term management of the woodland area, the protection, consolidation and encouragement of remnant ancient woodland communities and additional planting to increase the proportion of native flora and fauna at an ecologically appropriate pace;

- Where tree losses are unavoidable or desirable, non-native, or non-naturalised tree species will be selected for removal;

- Where trees have downgraded to Category C or U due to deteriorating condition, and where space allows, these will be retained in reduced, safe, form as habitat poles and deadwood will be left in-situ or moved to stable positions to build up a stock of long-term deadwood habitat; and,

- Close to trees, lodges will be designed to be built on stilts such that the area beneath them is fully ventilated and roof drainage is redistributed into the solum to allow for the ongoing vitality of roots and rooting soil.

Construction Phase

6.5.6 The procedures, protective measures and requirements for arboricultural supervision and monitoring set out in the Arboricultural Impact Assessment and Tree Protection Plans will be covered by (i) appropriate planning conditions (ii) the appointment of a project arboriculturist and (iii) adoption of the tree protection regime in all relevant contract and sub-contract documents.

Operational Phase

6.5.7 Use of the developed parts of the Site with new and retained woodland areas and any individual or group replanting will be pro-actively managed to ensure that public access, occupation of buildings and associated vehicular accesses and parking etc. are conducted whilst respecting the sensitivities of trees, groups and woodlands and the established aims and objectives of the Woodland Management Plan(s) (see 6.8.7 *et seq.* below).

6.5.8 The management will include areas of compensatory planting (see 6.8.3 *et seq*. below) which will be required as part of the overall mitigation measures arising from compliance with the Scottish Government's Control of Woodland Removal Policy and LLTNPA Policies.

6.6 Assessment of Impact

Woodlands

6.6.1 Through a combination of the stated design aspirations set out in the Design & Access Statement and the requirement to comply at the detailed planning permission stage with all relevant planning policies, the impacts are assessed on the assumption that all embedded mitigation will have been or will be incorporated into the development form as an inherent part of the Proposed Development.

6.6.2 The Proposal comprises several types of development within woodlands, as shown on the submitted indicative masterplan. These and the likely impacts after embedded mitigation are as follows.

6.6.3 **Table 6-8** below presents the assessment of impact for all identified woodlands which have the potential to be impacted by the Proposed Development. The sensitivity, magnitude of change and pre/post mitigation significance of effects are summarised in the table in **Appendix 6.5**.

Table 6-8: Assessment of Impact – Woodlands

Receptor	Description	Potential Impact	Mitigation	Assessment Score
Woodlands				
Managed Woodland	Enhanced recreational pedestrian access. These are proposed within AWI and non-AWI woodland areas. The proposal is based on the presumed avoidance of trees and systematic eradication of Invasive Non-Native Species.	Minor tree crown lifting to facilitate footpath construction access; additional pressure on area due to vandalism, fires, spillages, domestic pets, refuse.	Invasive non-native species eradication; opening up of woodland floor to woodland plant communities, progressive replacement of non-native tree and shrub species with native species, progressive improvement of tree age range and deadwood habitat.	Moderate positive
Woodland Lodges	Freestanding chalet-type holiday accommodation with more traditional foundations and below-ground service connections and vehicular access and parking. These are proposed within AWI areas only in the former walled garden and field area to the south. The majority are proposed within open areas, within areas of sparse tree cover, and within areas of continuous or near-continuous tree cover.	Loss of scrubby trees in the walled garden area with negligible biodiversity legacy; loss of sparse tree cover to the south; minor recoverable damage to tree roots outwith Root Protection Areas; minor tree crown lifting to facilitate construction access.	Invasive non-native species eradication, progressive replacement of non-native tree and shrub species.	Minor negative
Renovation of Woodbank House	Trees in the immediate periphery, particularly to the north of the building and to the south of the ancillary	Minor loss of groups and trees of negligible biodiversity legacy on the periphery of	Invasive non-native species eradication, progressive replacement of non-native tree and shrub species.	Neutral

Receptor	Description	Potential Impact	Mitigation	Assessment Score
	buildings, is required for car parking and this would remove small parts of tree cover in an AWI area.	woodland; minor recoverable damage to tree roots outwith Root Protection Areas; minor tree crown lifting to facilitate construction access.		
Pierhead, Visitor Hub Monorail Station, Hotel, and Indoor Water Park	This would necessitate the removal of two areas of woodland and partial removal of areas of tree cover to the east for car parking.	Removal of two areas of young or semi-mature plantation.	None.	Major negative
Boathouse Area	A boathouse of c.95m2 for storage of equipment and operation of water-based activities is proposed. This would necessitate the removal of individual regenerating trees within an AWI area and subject to a Tree preservation Order.	Minor loss of low quality semi-mature coppice-style trees; minor contribution to loss of visual amenity on promontory; negligible loss of biodiversity legacy.	Selective screen planting around boathouse to accelerate return of visual amenity.	Minor negative
Riverside Parking Area (West of Pier Road)	This would necessitate the removal of the majority of a woodland area, but with retention and reinforcement of woodland strips adjacent to existing housing.	Permanent loss of low-medium quality semi mature trees.	Dense native tree and shrub planting in new buffer along adjacent residential properties.	Moderate negative

Trees and Groups

Basis of Assessment of Sensitivity and Significance - Trees and Groups

6.6.4 The accompanying Design & Access Statement sets out the intention to avoid the loss of individual trees. Because the application is for PPiP, no detailed design of the Proposed Development is available or required other than to indicative location and scale of development. It is therefore not possible to assess the impact on individual trees or groups of trees at this stage of the planning process. In preference, embedded mitigation measures for the minimisation and avoidance of tree losses or damage is proposed to be delivered at the detailed design stage.

6.7 Post-Mitigation Assessment of Impacts

Woodlands

6.7.1 The assessment of significance of effects after embedded mitigation is summarised in **Table 6-5**.

6.8 Further Mitigation and Enhancement

6.8.1 Further mitigation will be provided at the detailed stage of planning and will include the following:

Compensatory Planting

6.8.2 The strategy for the proposed development and woodland management of the Site is to avoid development into woodland areas as far as possible, whilst taking account of other constraints such as the need to respect the heritage setting of parts of the Site. Where a need for development results in woodland removal, development has been located preferentially in

- Areas of woodland that are assessed as having low baseline value in accord with the criteria set out in Methodology section of this assessment and the least sensitive to change in terms of effects upon the landscape setting of the Site; and,
- Areas of sparse tree cover that do not constitute woodland.

6.8.3 Where woodland removal is inherent, losses will be replaced elsewhere within the Site by an equivalent area of new planting. The woodland management strategy adopted by the Development will aim to replace poor quality woodland with more appropriate native tree species as well as enhance areas of woodland on the Site through management actions. This will result in better quality, more accessible and more resilient woodland in the long term. New planting on the Site will provide biodiverse mix of native pioneer and climax species. This will improve overall collective biodiversity of the woodlands on the Site. Suitable species selection the new woodland areas also means that the woodland will be resilient to extreme climate change events and less susceptible to windthrow and pests.

6.8.4 The areas of tree cover to be retained and the indicative areas of compensatory planting in the indicative masterplan (Parameters Plan revision M) are shown on the plan comprising **Appendix 6.6**.

6.8.5 A more detailed analysis of the area east of Riverside Drive (being the larger part of Area B) has been undertaken to show the effect of an indicative layout (Masterplan Revision K). Taking account of the indicative position and size of proposed lodges, roads, parking and other land uses that would result in tree loss or preclude tree growth and applying the Arboricultural Impact Assessment principles in BS 5837:2012, the overall extent of land available for retention of existing tree cover, new tree planting at a woodland density and formally designated areas of compensatory planting has been identified and delineated.

6.8.6 This is shown as an overlay of Masterplan Revision K in Appendix 6.7.1 and for clarity the same delineations are also presented in Appendix 6.7.2.

6.8.7 **Table 6-9** below summarises the approximate scale of woodland removal and compensatory planting for each area and sub-area, expressed as a net loss or gain of tree cover.

Table 6-9: Scale of Woodland Removal and Compensatory Planting

	Area	Existing	Loss	Proposed/Possible	Gain	Net (Ha)
A	Station area	n/a		n/a		0
B	Riverside West of Pier Road	0.73		0.39		-0.34
B	Riverside East of Pier Road	3.26		3.57		+0.31
C	Pierhead		0.83		0.00	-0.83
D	Ben Lomond Way (West)		n/a		n/a	0
D	Boathouse		minimal		minimal	0
E	Woodbank		0.37		1.64	+1.27
	TOTAL					**+0.41**

6.8.8 Overall, this demonstrates that the indicative development has the spatial capacity to result in no net loss of woodland.

Woodland Management Plan

6.8.9 It is observed that much of the woodland has been unmanaged for a considerable time and has degraded as a result. The proposed development presents the opportunity for the woodland to

be positively and proactively managed. This will result in a more resilient and biodiverse woodland structure and more accessible to the public.

6.8.10 In consultation with stakeholders, managers, statutory authorities, a Woodland Management Plan will be finalised and adopted for each character area, based on the suite of management plan templates drawn up by Forestry and Land Scotland. The core concepts are:

- A clear and concise description of the woodland(s);
- A long-term vision for the woodland;
- The objectives of management;
- Management proposals for the next ten years; and,
- A mechanism for regular and future review of these.

6.9 Residual Effects – Woodlands

6.9.1 The overall significance of effects after further mitigation and enhancement are summarised in the Table at **Appendix 6.5**. These range from Moderate – Positive to Minor – negative, with an overall assessed impact of Neutral.

6.9.2 No overall net negative residual effects have been identified for the Site.

6.10 Monitoring

6.10.1 In the absence of any likely significant adverse effects, no monitoring is considered necessary. Effective monitoring will take place through the ongoing implementation and review of the Woodland Management Plan(s).

6.11 Summary

6.11.1 The chapter details the trees and tree cover within the site. It is differentiated into non-specialised woodland, woodland within the Ancient Woodland Inventory and individual trees and groups.

6.11.2 An assessment of old maps, aerial photographs, and relict ancient woodland within the AWI areas has been undertaken. Some adjustments to the raw AWI shapes have been found to be appropriate following the examination of old and current Ordnance Survey mapping. Ancient woodland value has been assessed by a number of appropriate overlapping criteria. Where no significant biodiversity legacy was found or likely to be present and/or where restoration potential is negligible, AWI areas have then been assessed as individuals, groups or woodlands.

6.11.3 Individual trees and groups of trees can be identified, protected by application of arboricultural survey, assessment and protection at the design, construction and operation phases and any planning conditions and additional protections deemed necessary by LLTNPA. 12 metre landscape buffer areas adjacent to existing residential development have been set aside and these represent an opportunity for net improvement of biodiversity and amenity tree and shrub density

6.11.4 A small area of the Boathouse area is within an existing TPO but is the least publicly visible part of the promontory where young and semi-mature trees have been removed in the past. Additional tree planting around the proposed building can be designed and planted to accelerate the contribution that the boathouse area makes to the visual amenity provided by the promontory area.

6.11.5 Where no relict ancient woodland features are present and by the passage of time cannot reasonably be expected to re-establish themselves, then woodland removal has been assessed under the Scottish Governments Control of Woodland Removal Policy as' more appropriate when accompanied by compensatory replanting' rather than as 'presumption against Ancient Woodland loss'. An assessment of additional public benefits and significant contributions to other public interest factors under the Policy is dealt with in other chapters of the EIAR.

6.11.6 An assessment of Sensitivity of Receptors and Magnitude of change shows some net negative impacts. However, following embedded mitigation and additional mitigation, the impacts range from Moderate Positive to Minor negative, with an overall assessment impact being **Neutral**.

6.11.7 Areas assessed as having significant quasi-ancient woodland character and/or biodiversity legacy have been identified and appropriate design stage precautionary principles are recommended. These include informing operational phase Woodland Management Plans.

6.11.8 The proposed development, woodland management and compensatory planting will ensure there will be no net loss of woodland and overall, the proposals will improve woodland quality and resilience. In particular, a Woodland Management Plan for the area of greatest identified levels of ancient woodland character will improve the quality of the woodland by the removal of large areas of dense invasive non-native species and by the consolidation, protection and encouragement of regeneration at an ecologically appropriate pace.

6.11.9 Proposed details of woodland removal and compensatory replanting would be considered at the detailed design stage. Therefore, no specific consideration has been given to the requirement for Felling Permissions at this stage. The effects of any temporary or permanent loss of tree amenity are also addressed within the **Chapter 11 – Landscape and Visual of this EIAR**. Wider considerations of the impact of the proposed development on other aspects of woodland, in particular protected species, are assessed in **Chapter 5 - Ecology of this EIAR**.

6.12 References

- BS 5837:2012 “Trees in Relation to Design, Demolition and Construction – Recommendations”.
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- A Guide to Understanding the Scottish Ancient Woodland Inventory (AWI) - Scottish Natural Heritage (undated).
- Restoration of Native Woodland on Ancient Woodland Sites - Forestry Commission, Edinburgh 2003.
- Strachan, I.M. 2017. Manual of Terrestrial EUNIS Habitats in Scotland. Version 2. Scottish Natural Heritage Commissioned Report No. 766 and accompanying correspondence tables.
- Site Layout Planning for Daylight and Sunlight (2nd edition) - Building Research Establishment 2011.
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- Ancient and other Veteran Trees: Further Guidance on Management (2017) Ancient Tree Forum.
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