PLANNING DESIGN ENVIRONMENT

Penrhos Holiday Village

Holy Island, Isle of Anglesey

Arboricultural Impact Assessment: Outline Application

An addendum to

Tree and Woodland Assessment

for

LAND & LAKES LIMITED

May 2013

(Addendum. Ref. **TEP.2977.023 Version 3**)

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ARBORICULTURAL IMPACT ASSESSMENT: OUTLINE APPLICATION
An addendum to
PENRHOS HOLIDAY VILLAGE
TREE AND WOODLAND ASSESSMENT

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DRAWINGS

1.0 INTRODUCTION

1.1 This is an addendum to the *Penrhos Holiday Village Tree and Woodland Assessment (TEP.2977.002 Version 1, April 2012)* prepared by TEP on behalf of Land and Lakes Limited (LLL).

1.2 The purpose of this addendum is to provide an objective assessment on the likely arboricultural impact of the outline masterplan proposals and the feasibility of attaining tree-dependent design objectives. The precise number and area of tree removals will be determined at the detailed design stage. It is assumed that planning permission will require future reserved matters applications that ensure the development proceeds in broad accordance with the approved masterplans (Appendix 1).

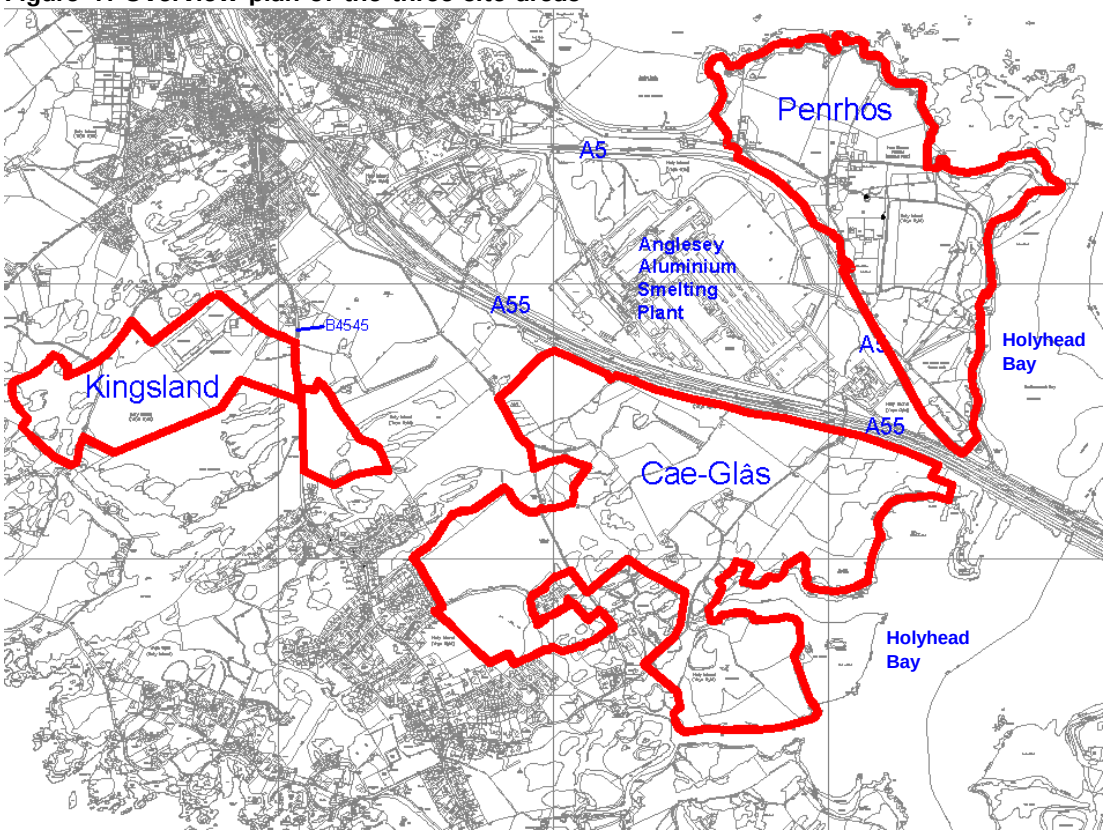
1.3 In response to comments made by Isle of Anglesey County Council (IOACC) two additional areas have been included in the tree survey; the boundary of woodland surrounding the Tre-gof Farmstead; and the gardens around Penrhos Farm. All arboricultural information recorded during the additional survey is presented at Appendices 1 and 2.

1.4 An additional 65 individual trees (T63-T127) and 47 groups of trees (G67-G113) were surveyed as part of the most recent surveys. Tree and group locations and quality values are shown on Drawings 1 and 2.

1.5 The master plan proposals to which this document relates are;

- Cae-Glâs PL 1114.CG.GA100 Revision N
- Penrhos PL1114.P.GA100 Revision J
- Kingsland PL114.K.GA100 Revision L

Figure 1: Overview plan of the three site areas



2.0 ASSESSMENT APPROACH

2.1 The proposed Penrhos Leisure Village is exceptional in both scale and concept. The impact assessment must balance interests of stakeholders, environmental receptors and development objectives.

2.2 The driving principle of the design is to integrate the development into the existing natural and historic environment. Retention of high environmental quality is fundamental to the overall success of the scheme. This in turn means it is essential to maintain a high quality tree resource.

2.3 The *Tree and Woodland Assessment* formed part of a suite of information used during the master planning process. The constraints and opportunities of the existing tree resource have been considered in detail in order to maximise environmental quality while planning an attractive and viable scheme. The masterplanning process has evolved in response to continual internal and external consultation and has been subject to amendment following public and stakeholder consultation.

2.4 This process has led to a proposal to remove some areas of existing trees, to create new areas of tree cover and to invest in the management and enhancement of retained and new woodland.

2.5 In response to comments from Anglesey County Council (IOACC) and to better inform the master plan, the woodland in and around the building footprint of the Tre-gof Farmstead was further compartmentalised and reassessed; in addition, the gardens around Penrhos Farm were surveyed in detail.

Woodland Cover Analysis

2.6 A desktop exercise to quantify the types of habitat present across the three development areas was undertaken as part of the Ecology and Nature Conservation Chapter of the Environmental Statement; these were categorised in accordance with Phase 1 Habitat Survey classifications. Table 1 (overleaf) provides an extract of the results of the assessment in respect of tree cover.

2.7 An analysis of the impact of the proposals on differing woodland types has been used in this report to draw broad conclusions. This is based on information provided by Planit. The precise number and area of tree removals will be determined at the detailed design stage.

Table 1 – Quantification of woodland cover using Phase 1 classifications

Woodland Type	**Area (ha)**
Cae Glas	**Total land area c. 124**
Semi-natural broadleaved	8.5
Broadleaved plantation	9
Coniferous plantation	13
Mixed semi-natural	-
Mixed plantation	11
Total Woodland Cover	**41.5**
Penrhos	**Total land area c.61**
Semi-natural broadleaved	1
Broadleaved plantation	14.5
Coniferous plantation	3
Mixed semi-natural	2.5
Mixed plantation	11
Total Woodland Cover	**32**
Kingsland	**Total land area c. 33.07**
No woodland present	-

Types of Arboricultural Impact

2.8 The impacts of the required tree removal, replacement planting and future management are considered in terms of the principal values provided by trees and woodland. These are *amenity value; habitat value; landscape and visual amenity; historical and archaeological value; green infrastructure and connectivity; environmental value* and *tree quality value*.

2.9 **Public amenity value** refers to the benefits to people that are accrued by proximity to and interaction with trees. These benefits can include improved physical and mental wellbeing, social and educational value and a sense of place.

2.10 **Woodland wildlife value** refers to the suitability of a particular tree, group or woodland to support reproduction or foraging of another species, including their role in wider habitat connectivity.

2.11 **Landscape and visual amenity value** relates to the appearance of trees from internal and external vantages. These may include formal arrangements such as avenues, individuals of particular visual importance or the prominent elements of woodlands visible from the surrounding landscape, particularly when the trees contribute character and distinctiveness.

2.12 **Historical and archaeological value** relates to veteran trees and those associated with historic structures. Value is typically increased where a tangible insight into former land use can be gained through the presence or condition of a particular tree or woodland.

2.13 **Environmental protection value** relates to the benefits that trees provide to soil, water and air and in respect of climate change. These include functions such as stormwater attenuation, particulate pollution trapping, nutrient cycling, carbon sequestration, wind speed reduction, erosion control and temperature moderation. These functions are deliverable on site and in the wider landscape.

2.14 **Tree Quality value** is associated with an individual tree's form, condition, species and replaceability. It considers the desirability of retaining and managing trees for their own sake and within the context of local and national policy or other cultural factors. The collective value of woodland compartments and impacts on future management and development pressures are also considered.

The Effect of Inaction

2.15 The majority of tree cover in the Penrhos and Cae-Glâs areas is middle-aged plantation. The nature of this artificially created landscape is such that management is required to ensure continuity of canopy cover.

2.16 Whilst the implications of development may be measured against the values described above, it is equally important to consider the likely implications if development and associated management did not take place.

2.17 Management of the plantation woodland to date has been minimal. Much of the work that has taken place has been reactive. The limited amount of proactive woodland thinning work has been reliant on Woodland Grant Scheme funding.

2.18 For the value of the woodlands to endure, significant investment in the long term management of the trees must be secured. A continuation of the existing management, or a complete lack of management, brought about through the closure of the park, will lead to woodland value diminishing.

2.19 To secure and improve upon the existing woodland value a comprehensive long term management plan should be agreed and implemented. Positive management intervention will include significant tree loss. Selective tree removal will be essential to allow for the introduction of a greater number of tree species, improve age diversity and to encourage natural regeneration.

2.20 Development presents an opportunity to secure a step-change in woodland management in terms of increased inputs to planning and human involvement compared to a situation where the landowner uses internal resources and Forestry Commission grant monies.

2.21 Table 2 (overleaf) presents a comparison between the potential implications of development and two possible outcomes of inaction. This assumes that without development the current use and management of tree cover would either remain constant or that a lack of funding would force the closure of the Coastal Park. The Table is only a summary of the "direction of travel" across the estate as a whole, and should be read in conjunction with the more detailed area-based analysis presented in the following chapters.

Table 2 – Comparison of potential implications on tree and woodland values between development and the status quo (Positive, Neutral, Negative).

With Development as Proposed	No Development and Coastal Park Maintained as Existing (alternative funding required)	No development and Coastal Park Closes
Public Amenity Value		
Locally reduced public accessibility	Continued access to existing areas	Widely reduced public accessibility
Areas of improved public accessibility	No new accessibility	Widely reduced public accessibility
New tree planting as part of approved landscape scheme and Woodland Management Plan	No new tree planting	No new tree planting
Woodland Wildlife Value		
Loss or fragmentation of some existing woodland habitats	No immediate change	No immediate change
New habitat creation and enhancement of existing habitats through the implementation of the Woodland Management Plan	No new habitat creation. Existing value diminishing	No new habitat creation. Existing value diminishing. Some enhanced desirability due to public exclusion
Landscape and Visual Amenity Value		
Change in the visual landscape (may be positive or negative)	No immediate change	Loss of visual amenity due to public exclusion
Historical and Archaeological Value		
Loss of some trees associated with historic buildings	No change	No change
Environmental Protection Value		
Loss of some existing woodland	No change	No change
Gain in local benefits through good design	No change	No change
Tree Quality Value		
Direct tree loss as a result of construction	No tree loss. Existing value diminishing	No tree loss. Existing value diminishing
New tree planting as part of approved landscape scheme and Woodland Management Plan	No new tree planting	No new tree planting
Woodland management secured with increased funding	No management	No management

3.0 ASSESSMENT OF ARBORICULTURAL IMPACTS: CAE-GLÂS

Impacts on Public Amenity Value

3.1 The loss of amenity associated with the proposed tree removals in the Cae-Glâs area will be small. Large areas of the coastal plantation are currently inaccessible and much of the inland plantation is rather impenetrable and discourages public access. The trees and compartments most frequented are adjacent to Trefignath Lane, Trefignath burial chamber and the several scattered dwellings within the site, all of which will be retained.

3.2 The proposals will greatly improve the amenity value of the tree stock by increasing public access to the woods, improving management of the existing plantation and by the creation of better quality landscaping. The new Visitor Centre will form a hub for woodland activities and is likely to result in increased interaction with trees by site visitors.

Impacts on Woodland Wildlife Value

3.3 The impact of development on individual habitats has been assessed in the Ecology and Nature Conservation Chapter of the Environmental Statement. This section assesses the ecological impacts associated with tree removals only.

3.4 There will be a reduction in temporary tree cover suitable for nesting birds created by tree removal. The impact will be small due to the large amount of retained plantation. The long-term benefits of the extensive tree planting proposals are likely to have a positive effect on the number of trees suitable for use by nesting birds.

3.5 There will be a potential loss of dray sites for red squirrels during footpath construction and felling to improve the structure in plantation W35. This impact may be reduced through selective tree removal to avoid trees observed to contain, or be highly suitable for, dray construction. Long-term management benefits will be brought by the planting of broadleaved tree species known to be used by red squirrels including hazel, sweet chestnut, English oak and walnut.

3.6 The north-western holiday lodges will require localised tree removal. This will have an impact on any wildlife currently using the area and those commuting to the waterlogged clearing at the centre of plantation W12. In the context of Cae-Glâs, this will have a slight impact on wildlife corridors as it will be mitigated by the retention of surrounding plantation and the creation of the tree buffer along the northern boundary.

3.7 Proposed new planting will bolster the very weak woody vegetation link between areas of tree cover to the east and west of the Cae-Glâs area. This distance of 230 metres is currently spanned by a single hedgerow containing several small trees.

3.8 The entire length of the proposed road infrastructure will be associated with existing trees, woodland edge or new buffer planting. New roads within the woodland will follow old rides and plantation compartment boundaries where tree cover is sparser. Road width (as quiet internal access roads) will not present a barrier to birds, mammals or reptiles. Should detailed assessment indicate a local problem, specialised design features may be incorporated to accommodate wildlife requirements.

3.9 Pathways created through plantations will seek to complement their natural surroundings, the local alignment of which may be dictated by individual trees. Such paths will be narrow and will not discourage wildlife movement, and where possible will retain branch to branch contact of larger, broad-spreading trees.

Impacts on Landscape and Visual Amenity Value

3.10 The impact of tree losses on the appearance of trees in the Cae-Glâs area from external vantages will be small. The prominent coastal plantations will be retained and the majority of trees along in-land boundaries will also be kept.

3.11 The visual impact of tree loss from the North Wales Expressway (A55) will be compensated for by the creation or extension of the woodland buffer along the entire northern boundary of the area and the creation of a landscaped/planted bund.

3.12 The proposed entrance road, where it breaks from Trefignath Lane follows the alignment of an overgrown ride through plantation W1, before connecting to the existing internal road network. The visual impact of re-opening this old access point will be smaller than would otherwise arise from breaking into a uniform woodland edge.

3.13 The creation of the road and footpath infrastructure will ultimately result in improved internal views of wooded compartments. The segregation of the primary parking area and the holiday village by plantation woodland increases this opportunity. The visual appeal of trees within the development will be further enhanced through appropriate management works to improve their structure and increase species diversity.

Impacts on History and Archaeological Value

3.14 The vast majority of trees in the Cae-Glâs area do not have any significant historical value and are estimated to be between 25-40 years of age. The 20th century planting contributes to the setting of older archaeological remains but does not reflect tree cover at their time of construction.

3.15 The proposed construction of a hotel on the boundary of plantation W22 has the potential to impact upon tree cover historically associated with Tre-gof farmstead. A detailed tree survey around the old farm footprint conducted in April 2013, has confirmed that the trees in this area are generally younger and of consequently lower arboricultural value than the wider plantation. It will therefore be possible to construct the hotel without significant effect on the function and value of the woodland. This will be subject to strict build-controls and an acceptance of a reduced operational stand-off from the woodland.

3.16 A group of sycamore and ash (G32) also associated with the Tre-gof farmstead is proposed for retention with the gardens of the new hotel.

Impacts on Environmental Protection Value

3.17 Under the current proposals, the impact of tree removals in the Cae-Glâs area on tree-related environmental gains will be small. There will be localised impacts associated with the removal of individual trees such as loss of shade and shelter and the possibility of increased soil erosion.

3.18 There is likely to be a local rising of ground water levels due to the removal of the alder plantation W12. This will be addressed through the creation of a new lake and drainage system. Wider stormwater attenuation will be provided through the retention and planting of trees; this will be amplified by the use of permeable surfacing for informal pathways and in areas such as the 'woodland parking spaces'.

3.19 The relatively low level of current public access means that local environmental benefits will become more apparent and valuable as the number and type of human receptors increases. These will include shelter and windbreak effects from the proposed new trees along the new entrance roadway and amongst the holiday lodges and noise attenuation from the buffer planting parallel to the A55.

3.20 There is the potential risk of increasing wind related failure by the removal of well-established trees from structurally interdependent groupings (refer to section 4.15-4.21 of the *Tree and Woodland Assessment*). This has been considered during the masterplanning process; tree removal within compartments W35-37 will only be required to allow for internal pathways and several small look-out shelters. The vast majority of fringe trees will be retained and those that are removed will only be felled following further investigation into their suitability for removal. Plantation W29 will accommodate internal pathways only and be augmented with new planting along its south-western edge.

3.21 Construction of the new entrance roadway through plantation W1 will require stand stabilisation works to minimise future wind-failure. The compartment's mixed species composition makes this action feasible whilst retaining a significant level of tree cover in the context of a wider management program.

3.22 Plantation compartments W13, W14 and W17 affected by the development proposals have been identified as the most vulnerable to wind-failure as they develop over the next 20 to 30 years. An increased level of clearance will therefore be required around structures and any retained sections will need to be managed to ensure structural improvement. It is acknowledged in the Woodland Methodology & National Woodland Strategies document (Appendix 1 to the Response to Impact on Woodland Assessment, 14 February 2013) produced by Planit that partial or clear fell will be considered in these conifer plantations.

Impacts on Tree Quality Value

3.23 The Cae-Glâs masterplan proposals allow for the retention of the majority of tree cover. The majority of those to be removed are of low value (C-Category under BS 5837:2005).

3.24 The thinning, re-structuring and possible clear felling of plantation compartments W12, W13, W14, W16 and W17 (C-Category) will be required for the construction of lodges. Limited internal diversity or amenity and the risk of wind-failure will dictate the degree of tree removal required. The impact on individual compartments will be large, however the arboricultural impact in the context of the whole site will be small.

3.25 The removal of trees around the old Tre-Gof farmstead will be required to accommodate the proposed hotel (T121-125, T127 and G101-109, G11-13, all formerly part of W22); the remainder of W22 and group G32 will be retained to provide amenity and a sense of maturity to the new building. The arboricultural impact of these tree removals in the context of the whole site is small.

3.26 The extensive new planting scheme presents significant opportunity to mitigate for the loss of arboricultural value. This will be dependent on species selection and planting design.

3.27 The greatest opportunity to enhance the arboricultural value of the tree stock is through the establishment of a robust and long-term management plan. Without intervention, nature's reclamation of much of this artificially created landscape would ensure a steady decline in value, before the natural cycle of self-sustaining woodland could be established. In situations such as coastal coniferous plantations, tree loss due to wind-failure in the absence of pro-active management is likely to be abrupt and widespread.

3.28 Effective management will alleviate inherent problems and catalyse the transition from plantation to woodland. The importance of this aspect in securing long-term tree cover and the benefits trees provide to the development and wider environment should not be down-played.

4.0 ASSESSMENT OF ARBORICULTURAL IMPACTS: PENRHOS

Impacts on Public Amenity Value

4.1 The Penrhos area is the most sensitive of the three sections. High public usage, a sense of familiarity by locals and the coastal setting help to elevate the amenity value of the treestock. Consequently the assessment of arboricultural impact considers two scenarios; the first-time visitor guided along the coastal footpath; and the frequent local walker following a premeditated route through the inland plantation.

4.2 A significant proportion of tree cover within the existing Coastal Park designation will be retained. This includes all trees associated with the peripheral coastal footpath and large areas of plantation to the south of the Park. The impact on amenity value in respect of the coastal setting will therefore be small.

4.3 Trees proposed for removal in compartments W45 and W63 are subject to statutory recognition of their visual amenity through the creation of a Tree Preservation Order (refer to sub-sections 5.1-5.4 of the *Tree and Woodland Assessment*).

4.4 The removal of a large part of planation W63 will have the greatest effect on inland trees. This woodland contributes some of the oldest and most developmentally advanced tree cover within the Penrhos site. A network of formal pathways and desire-lines allow pedestrians to gain a high level of access throughout the woodland. The largest loss will be to the section of woodland not covered by the Tree Preservation Order, although there is no distinction in quality between those parts covered and those parts not covered. The impact on the part of the woodland covered by the TPO will

be smaller allowing much more opportunity to retain its higher value elements. However, due to the proportional extent of loss, the impact on amenity value associated with W63 will be large.

4.5 The loss of trees at the centre of plantation W45 to create a 'woodland parking area' will change the way in which people interact with these trees. For pedestrians and users of the wider Coastal Park, there will be a negative impact due to a reduction to a network of desire-lines. To car users it will undoubtedly increase their perception and enjoyment of the natural environment, compared to a typical urban or open space car park.

4.6 The proposals take advantage of the private residencies of Penrhos Farm. Trees in this area contribute to the general character of the area by virtue of their height and maturity; however their location within private gardens restricts direct public interaction. The loss of these trees will have a medium impact on amenity.

4.7 The reduction in size of the publically accessible Coastal Park can be offset by the enhancement of retained plantations without detriment to the amenity of the coastal footpath. Investment in the enhancement of the retained Park and in the facilities therein has the potential to increase public amenity despite a reduction in overall size. The loss of the older sections of plantation could be replaced by new plantings, but only in the long-term.

Impacts on Woodland Wildlife Value

4.8 The impact of development on individual habitats and species of conservation value is assessed as part of the Ecology and Nature Conservation Chapter of the Environmental Statement. This section assesses the ecological impacts associated with tree removals only.

4.9 There will be a significant reduction in tree cover suitable for nesting birds. This impact will be short term as new nest sites will become available as new tree planting develops.

4.10 Parts of plantation compartments W63 may contain bat roosts; however bat activity surveys undertaken in 2011 indicate only small numbers of roosting bats are likely in W63 and no evidence of roosts was found in W68. Tree features suitable for bat roosting are generally associated with older trees (decay cavities, branch splits, peeling bark etc.) and it will not be possible to mitigate for this loss through the creation of natural features in the short to medium term (including the construction phase and first 30 years of the operational stage). Artificial mitigation by way of bat box installation and suitable building features will be possible.

4.11 The location of the Estate Cottages to the north of Penrhos Coastal Park is associated with the most significant tree removal by area. This will have an impact on wildlife currently using this plantation and those that use it

as a commuting route. In the context of the Penrhos area, this will have a direct impact on wildlife corridors and transport routes due to the scale of plantation blocks.

4.12 Habitat connectivity in the southern third and along the eastern coastline of the Park will be retained.

4.13 The majority of the proposed road infrastructure will be associated with existing trees, woodland edge or new buffer planting. The creation of new roads will extend vegetation corridors further north onto the headland. Road width (as quiet internal access roads) will not present a barrier to birds, mammals or reptiles. Should detailed assessment indicate a local problem, specialised design features may be incorporated to accommodate wildlife requirements.

Impacts on Landscape and Visual Amenity Value

4.14 The impact of tree losses on the appearance of trees in the Penrhos area from external vantages will be small. Coastal tree cover will be retained and the majority of trees along inland boundaries will also be kept. The removal of plantation woodland to the north of Penrhos Farm may be visible from Anglesey but the overall green appearance of Holy Island will be retained.

4.15 Removal of trees within plantation W45 to create 'woodland parking' will have a small negative impact on internal vistas. This will be minimised by the consolidation of parking spaces within a defined area of clear felled trees, rather than to try and integrate parking bays throughout the woodland. This impact is likely to increase initially as retained plantation undergoes selective thinning as part of proposed and necessary enhancement works. Longer-term benefits of the thinning process will see an increase in natural regeneration and therefore improved screening by trees of a more diverse age range.

4.16 The creation of the road and footpath infrastructure within the Quillet will ultimately result in improved internal views following the establishment of new planting around the proposed infrastructure in this area.

Impacts on History and Archaeological Value

4.17 The majority of trees in the Penrhos area do not have any significant historical value.

4.18 Plantation W63 includes a number of stone buildings and historic formal landscape elements. These add to the amenity value of the compartment, but the plantation does not date back to the time of construction of the buildings. There is some historical interest in that tree cover is likely to have been present (in one form or another) since the mid-17th century.

4.19 All high value, fully-mature trees recorded during the tree survey can be retained. These include several specimens that are likely to date from the Stanley family dynasty planted around the 1800's (refer to sub-sections 3.1-3.3 of the *Tree and Woodland Assessment*).

Impacts on Environment Protection Value

4.20 There will be small localised impacts associated with the removal of part of plantation W65, including increased exposure of internal areas. This is likely to be offset in the long-term as new planting matures, providing an increase in benefits such as the provision of shade and shelter to the headland lodges.

4.21 There will be a slight reduction in carbon sequestration in the short-term associated with the direct loss of parts of W45, W63 and tree cover within the gardens of Penrhos Farm.

Impacts to Tree Quality Value

4.22 Plantation W63 has been categorised as high value (A-Category under BS 5837:2005). Given the broadleaved tree species diversity, this compartment has developed a more naturalistic impression and is developmentally more advanced than other plantations in the Penrhos section. There will be a large impact the western part of W63 and a smaller impact on the eastern section covered by the Tree Preservation Order.

4.23 The integration of lodges in the eastern section of W63 is achievable and will require further investigation to determine a lodge density and layout so that the most valuable tree features and the existing woodland character can be retained. It is the intention to maintain 70% canopy cover in this area in addition to new tree planting and woodland improvement works. Detailed woodland assessment will help identify any existing and potential clear areas within the wood for lodge placement.

4.24 Construction of Estate Cottages within the western half of W63 and the gardens of Penrhos Farm will result in the loss of approximately 70% of the existing tree cover. This includes the removal of a proportion of high value woodland and a mixture of low to moderate value woodland and ornamental garden specimens. Parts of W63 and high value garden trees (T118 and G5) will be retained, and the overall design will be guided by the additional detailed survey information included in this report.

4.25 The loss of trees at the centre of plantation W45 to create car parking will result in a moderate impact on this individual compartment, although in the context of the whole site this will be small. The area required for car parking will be consolidated to reduce its footprint and allow maximum retention of exiting woodland. Further investigation will inform the exact location of the parking area to minimise the loss of higher value trees.

4.26 The new planting scheme presents an opportunity to mitigate in part for the loss of arboricultural value. There is opportunity within the Quillet to increase arboricultural value through retention of larger tree blocks and augmentation using appropriate species selection and planting design. There is also opportunity to transplant some of the younger trees from the Quillet to other areas of the site.

4.27 The greatest opportunity to enhance arboricultural value in the Penrhos area is through the establishment of a robust and long-term management plan. Without intervention, nature's reclamation of much of this artificially created landscape would ensure a steady decline in value, before the natural cycle of self-sustaining woodland could be established.

4.28 Effective management will alleviate inherent problems and catalyse the transition from plantation to woodland. The importance of this aspect in securing long-term tree cover and the benefits trees provide to the development and wider environment development should not be down-played.

5.0 ASSESSMENT OF ARBORICULTURAL IMPACTS: KINGSLAND

5.1 The implication of development on trees in the Kingsland area will be very small. For this reason a measurement of impact against the multiple values previously addressed has not been undertaken.

5.2 Development within the Kingsland area will have a positive impact in terms of trees with a considerable net increase in the number, distribution and species.

5.3 The occurrence of strong prevalent winds means the width of the proposed buffer planting along the southern boundary is likely to yield particularly positive results in comparison to thinner belts or isolated planting.

5.4 Any planting and management schemes for this area must recognise the benefits of companion shelter and the use of better acclimatised nurse trees. A conventional species palette and establishment timescale will not be appropriate. Species known for their tolerance of coastal conditions include holly oak (*Quercus ilex*), Tamarix (*Tamarix aestivalis*), sycamore (*Acer pseudoplatanus*), aspen (*Populus tremula*) and maritime pine (*Pinus pinaster*). Species choice will be subject to a landscape condition attached to any planning approval.

6.0 SUMMARY OF ARBORICULTURAL IMPACTS

Cae-Glâs

6.1 The following section summarises the impacts without mitigation, mitigation measures and the residual impacts upon arboricultural values within the Cae-Glâs area.

Impacts

6.2 The primary tree related impacts of the proposed development in the Cae-Glâs area will be on woodland wildlife and local environmental protection values. The impact on public amenity, visual amenity, historical and tree quality values will be lower.

6.3 There will be a slight reduction in tree cover suitable for nesting birds due to overall tree removal. There may also be a potential loss of dray sites for red squirrels during improvement works in plantation W35.

6.4 The removal or extensive re-structuring of plantation compartments W13, W14, W16 and W17 will incur localised environmental impacts such as loss of shade and shelter, a rise in ground water levels and the possibility of increased soil erosion.

6.5 Following further compartmentalisation and valuation of trees close to Tre Gof farmstead, the location of the new hotel within the footprint of the old farmstead is considered feasible. It will result in the loss of low and moderate value trees (C and B-Category under BS 5837), all high value trees (A-Category) can be retained.

Mitigation

6.6 The extensive tree planting proposals will be able to compensate for the loss of the relatively small area of low value plantation. This will provide an opportunity to connect currently fragmented tree cover and facilitate age and species diversification across the site.

6.7 A long-term management plan for retained woodland will ensure continuity of canopy cover and increase tree-related values. The security of regular funding will allow the appropriate planning and implementation of the works required to restructure large areas the coastal plantation vulnerable to wind-failure.

Assessment of Residual Impact

6.8 The residual impact of the proposed Cae-Glâs development on arboricultural value will be small. The negative effects on arboricultural values will be short-term (construction phase and first 20 years of the operational phase) with the potential for a net increase in values in the long-term.

6.9 Carefully considered new planting and plantation management will result in short-term loss of woodland cover but a long-term gain. The value of new planting will increase as it becomes established and will ultimately result in a net increase (approximately 4.3ha) in collective tree cover (inclusive of woodland, amenity trees and buffer planting).

6.10 Effective management of the existing treestock will alleviate inherent problems and catalyse the transition from plantation to woodland. The residual impact in this respect will be woodland of higher value and sustainability than would otherwise be likely if development did not occur.

6.11 Management of the coastal plantation will secure the future habitat of the red squirrel by diversifying tree age and species. This is considered a crucial step in the stabilisation of the very fragile, mono-age coniferous stands that currently support the species.

Penrhos

6.12 The following section summarises the impacts without mitigation, mitigation measures and the residual impacts upon arboricultural values within the Penrhos area.

Impacts

6.13 The primary tree related impacts of development in the Penrhos area will be on public amenity, woodland wildlife, environmental protection and tree quality values. The impact on visual amenity and historical values will be lower.

6.14 A reduction in the size of the publically accessible Coastal Park has the potential to have the greatest effect on public amenity. Trees proposed for removal in compartment W45 and half of W63 are subject to statutory recognition of their visual amenity through the creation of a Tree Preservation Order.

6.15 There will be a significant reduction in temporary tree cover suitable for nesting birds by tree removal. The loss of part of plantation compartment W63 may also contain bat roosts.

6.16 The removal of part of plantation W65 is likely to increase the exposure of internal areas of the wider tree cover to non-prevalent winds.

6.17 There will be a slight reduction in carbon sequestration in the short-term associated with the direct loss of plantation.

6.18 The location of the Estate Cottages to the north of Penrhos Coastal Park will result in the greatest arboricultural impact and loss by area (W63, T66-120 and G67-100). This will result in the loss of a network of footpaths, wildlife and connectivity functions and a proportion of the older and better quality trees (plantation and garden individuals, A and B-

Category under BS 5837). The additional survey of trees surrounding Penrhos Farm shows that it would be feasible to retain a proportion of the highest value features in this area.

6.19 The loss of trees at the centre of plantation W45 to create a 'woodland parking area' will have differing impacts depending on the user group. To pedestrians who currently use the woodland there will be a direct loss of recreational footpaths; but to car users the presence of trees will undoubtedly increase amenity value, compared to a typical urban or open space car park.

Mitigation

6.20 Mitigation in the Penrhos area will be provided in the form of new tree planting and secured management of retained trees. This, together with significant improvements to internal pathways and the creation of new boardwalks, will result in a better overall woodland tree stock that is more accessible to the public.

6.21 New tree planting presents an opportunity to mitigate in part for the loss of arboricultural values. Within the Quillet area tree quality and environmental protection values will be increased through selective retention and augmentation via new planting.

6.22 A long-term management plan for retained woodland will ensure continuity of canopy cover and increase tree-related values; a holistic woodland approach that includes the Holiday Village and Coastal Park would be of greatest benefit. The security of regular funding will allow the appropriate planning and implementation of the works required to improve the structure of retained plantation. An absence of any such management would allow a steady decline in value, before the natural cycle of self-sustaining woodland could be established.

6.23 Investment in the management of retained plantation has the potential to provide long-term mitigation for the loss of woodland covered by the Tree Preservation Order. This can be achieved through enhancement to a point where comparable amenity values are achieved or exceeded; a process that will be greatly accelerated by good silvicultural management.

6.24 The preparation and strict adherence to Arboricultural Method Statements (AMS) will be critical to maximising tree retention. The AMS process must consider construction logistics, material use, procedure and operational requirements of the development with the aim of minimising damage to trees and the soil they grow in. Build areas that will require guidance by an AMS will be identified at the detailed design stage. The consideration of trees at this time alongside other project disciplines (layout, drainage, utilities etc.) will aim to minimise future conflict and unnecessary tree loss.

Assessment of Residual Impacts

6.25 The reduction in size of the publically accessible Coastal Park can be offset by the enhancement of retained plantations without detriment to the amenity of the coastal footpath. Investment in the enhancement of the retained Park and in the facilities therein has the potential to increase public amenity despite a reduction in overall size.

6.26 The negative impact on bird nest sites will decrease as new tree planting develops. The long-term residual impact in this respect is likely to be neutral.

6.27 The small anticipated increase in wind-exposure created by the removal of internal parts of W65 will be offset in the medium to long-term as new planting matures. This has the potential to provide an increase in environmental benefits such as the provision of shade and shelter to the headland lodges.

6.28 Under the current proposals there will be a net decrease in tree cover (approximately 2.5 hectares). Potentially this could be interpreted as having the largest effect on arboricultural values in the short to medium term (construction phase and the first 20 years of the operational phase) before new tree planting becomes established. However, due to the make-up of the existing tree cover (plantation) and its diminishing value, due to the lack of management, this net decrease must be considered against the benefits that will be brought about through development. It must not be assumed that the absence of development would secure the plantations future when a primary risk of maintaining the status quo or potential closure of the Coastal Park due to a lack of funding, is likely to lead to the loss of the majority of existing woodland cover.

Kingsland

Impacts

6.29 The implication of development on trees in the Kingsland area will be very small. For this reason a measurement of impact against the different types of arboricultural values has not been undertaken.

Mitigation

6.30 New tree planting (3ha) presents an opportunity to establish tree cover that is significantly more diverse in terms of species, distribution and growth form than currently exists. Successful tree establishment will require appropriate species selection, the use of companion shelter and better acclimatised nurse trees.

Assessment of Residual Impacts

6.31 Development within the Kingsland area will have a positive impact in terms of trees with a considerable net increase in the number, distribution and species.The current proposals will establish 1.5 hectares of new woodland in addition to trees planted for amenity.

APPENDIX 1

ILLUSTRATIVE MASTER PLANS

PENRHOS

KINGSLAND

CAE GLAS

rev.	Status.	Date.	Drawn.
E	PLAN UPDATE	01.05.13	JW
D	PLAN UPDATE	29.10.12	JW
C	RED LINE REVIEW	15.10.12	JW
B	PLANNING ISSUE	21.08.12	JW

LAND & LAKES (ANGLESEY) LTD

North

Dwg. Title: **OVERALL INDICATIVE MASTERPLAN**

Dwg. No. PL1114.P.GA103 | rev. E | Status. PLANNING

Scale A1 1:5000 | Date. 06.02.12 | Drawn. GS | Appd. EL

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APPENDIX 2

TRE-GOF FARM ARBORICULTURAL SURVEY DATA SHEETS

APPENDIX 1: Arboricultural Survey Data Sheets

Surveyor Richard O'Shea
Date 19.03.13
Town Penrhos
Site Tre Gof Farm Cae-Glas
Dwg Ref D2977.007

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
Trees																			
T121	Sycamore	6.0	260.0	1.0	3.0	1.0	2.0	3.0	2.0	NW	Young	Good	Self sown vigorous tree; pronounced buttresses; stem leaning west; crown weighted north.	C,1	3.1	30.6		Long	
T122	Hawthorn	4.0	353.6	2.0	6.0	1.0	1.0	2.0	0.5	N	Middle Age	Poor	Partially failed at the root plate and hung up in group of dead elms.	U	0.0	0.0		Short	
T123	Common ash	8.0	653.0	2.0	3.0	5.0	4.0	4.0	2.0	W	Middle Age	Fair	Basally twin stemmed; stem abutting wall; pronounced buttressing and surface roots up to 4m from the stem. Healthy crown generally. Generally healthy crown; large low branch growing along top of wall to the west; minor deadwood and Ivy clad stem.	B,1,2	7.8	192.9		Long	
T124	Sycamore	7.0	738.2	2.0	3.0	8.0	6.0	2.0	2.0	S	Mature	Fair	Situated on edge of former farmstead. Severe crown asymmetry; large low limb branching at 1.5m extending south east sweeping over former building. Minor failures; basal epicormics and barbed wire included in to the stem.	A,2	8.9	246.6		Long	
T125	Common ash	6.0	480.0	1.0	3.0	2.0	5.0	4.0	3.0	W	Middle Age	Good	Situated along wall edge. Bifurcate at 1.5m; stunted crown weighted east; minor failures, good vigour .	B,1,2	5.8	104.2		Long	
T126	Sycamore	8.0	969.4	2.0	6.0	5.0	6.0	7.0	1.5	N	Mature	Good	Large promient tree situated along woodland edge and walled boundary. Basally bifurcate; basal epicormics, moderate deadwood and small pruning stubs. No significant defects.	A,1,2	11.6	425.1		Long	
T127	Sycamore	11.0	530.0	1.0	3.0	4.0	3.0	4.0	2.0	SE	Middle Age	Good	Situated alongside external farmstead wall. Reasonable form; branching low on the wall; ivy clad and rubble in rootzone.	B,1,2	6.4	127.1		Long	
Groups																			
G101	Sycamore, hawthorn	2 to5	120 to 420	23.0							Young to Middle Age	Good	Scattered group of self sown trees; an even mix of hawthorn and sycamore. Mostly situated close to the farm wall. Generally good health, some trees have stunted form. Some trees have suffered leader failure at 3m due to wind exposure.	C,1,2	Refer to Drawing	n/a		Long	

APPENDIX 1: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
G102	Hawthorn ,sycamore, elm sp.,	1 to 4	75 to 180	6.0							Young	Good	Small group of hawthorn, elm and sycamore regeneration growing along the wall edge of former buildings.	C,2	Refer to Drawing	n/a		Medium	
G103	Elm sp,.	2 to 7	75 to 200	circa 40							Young	Poor	Small group of trees at various stages of Dutch Elm Disease D.E.D. All trees appear to infected.	C,2	Refer to Drawing	n/a		Short	
G104	Sycamore, elder, elm sp,.	3 to 7	75 to380	circa 25							Young to Middle Age	Fair	Self sown trees growing within footprint and foundations of the former farm yard and outbuildings. The group forms continous canopy cover with G5.Mainly sycamore with the occasional elder and elm. 5 sycamore have 280-380dbh; pronounced buttresses, reasonable form and good crown health.	B,2	Refer to Drawing	n/a		Long	
G105	Elm sp,.	5 to 7	75 to 125	9.0							Young to Middle Age	Poor	Small group of trees at various stages of Dutch Elm Disease D.E.D. All trees appear to infected.	C,2	Refer to Drawing	n/a		Short	
G106	Sycamore	4 to 5	75 to 150	circa 20							Young	Fair	Young self sown trees, several multistemmed, growing on a mound of stone.	C,2	Refer to Drawing	n/a		Medium	
G107	Sycamore	8.0	360 to 480	3.0							Middle Age	Good	Situated on northern edge of former farmstead. Generally good condition; reasonable form; no significant defects; minor deadwood and rubble in rootzone.	B,1,2	Refer to Drawing	n/a		Long	
G108	Sycamore, hawthorn	3 to 5	150 to 250	3.0							Young to Middle Age	Fair	Small group; 1 hawthorn on outside of edge of wall has minor failures and deadwood. 2 sycamore forming canopy with T3, 1 tree suppressed with basal epicormics.	C,1,2	Refer to Drawing	n/a		Long	
G109	Sycamore	3 to 6	300 to 450	3.0							Middle Age	Fair	3 trees form canopy cover with G9 but have been suppressed by the surrounding mature trees. 2 trees have lost leaders with associated decay cavities. Previous branch failures; moderate deadwood and basal epicormics.	C,1,2	Refer to Drawing	n/a		Medium	
G110	Sycamore, Elm sp.,	2 to 6	100 to 250	8.0							Young to Middle Age	Poor	Small group of trees; mostly dead, dying elm with the occasional sycamore.	C,2	Refer to Drawing	n/a		Short	

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Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
G111	Elm sp,.	6.0	100 to 150	circa 50							Young to Middle Age	Poor	A stand of elm at various stages of D.E.D. 1 large elm stump within western part of group is liekly to be producing root suckers that have spread approximately 10m from the stem and which form a dense area of pure elm canopy cover. Dense bramble and deadwood stems form understorey. Sycamores defines the edge of elm group and start of wet boggy area.	C,2	Refer to Drawing	n/a		Short	
G112	Sycamore	6 to 9	200 to 350	4.0							Middle Age	Good	4 trees situated along edge of farmstead wall and woodland. Reasonable form and crown health; tight unions; minor deadwood and ivy clad. Southern tree smaller and suppressed.	B,2	Refer to Drawing	n/a		Long	
G113	Sycamore, Common ash	7 to 10	220 to 550	12.0							Mixed Age	Good	Woodland edge trees growing within 1m to 6m of farm wall. A component of W22, forming continous canopy cover and same canopy structure and ground flora. Mostly sycamore with occasional ash. Situated on a slight raised area of ground. Woodland edge trees overhang farm wall by up to 3m. 1 dead sycamore habitat pole 4m high and situated 7m from the wall.	B,1,2	Refer to Drawing	n/a		Long	

APPENDIX 3

PENRHOS FARM ARBORICULTURAL SURVEY DATA SHEETS

APPENDIX 1: Arboricultural Survey Data Sheets

Surveyor Richard O'Shea
Date 19.03.13
Town Penrhos
Site Erw Deg Penrhos
Dwg Ref D2977.008

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
Trees																			
T63	Sycamore	6.0	360.0	1.0	4.0	4.0	4.0	4.0	2.0	N	Middle Age	Fair	Situated on edge of grassed bund and gravel drive. Stunted form; Ivy clad stem and minor deadwood.	C,1	4.3	58.6		Long	
T64	Horse chestnut	5.0	170.0	1.0	2.0	2.0	3.0	2.0	1.5	N	Mature	Fair	Situated on top of small grassed bund. Slight crown asymmetry; stem epicormics and surface roots.	C,1	2.0	13.1		Long	
T65	Sycamore	12.0	608.3	2.0	4.0	6.0	5.0	4.0	4.0	SE	Middle Age	Good	Situated on small grassed bund. Bifurcate at 1m; codominent stem; slight stem lean east; crown weighted south and sparse to north.	B,1	7.3	167.4		Long	
T66	Cabbage palm	4.5	250.0	1.0	1.0	1.0	1.0	1.0			Middle Age	Dead	Multistem mid-stem. Standing dead with minor retained foliage. Bark peeling/cracks and splits. Moderate deadwood.	U	0.0	0.0		Short	
T67	Sycamore	14.0	610.0	1.0	6.0	4.0	4.0	5.0	3.0	W	Middle Age	Fair	Stem sweep at base. Basal cavity with moderate decay, adaptive wood forming bulge on outer edge of cavity. Crown weighted north; reduced vigour; dieback in upper crown; minor deadwood and Ivy clad stem.	B,2	7.3	168.3		Long	
T68	Beech	12.0	510.0	1.0	7.0	5.0	5.0	1.0	1.0	S	Middle Age	Fair	Branching low at 1.5m to south. 1 main stem weighted north east and several low branching subordinate stems. Untidy form and crowded out by adjacent sycamore. Ivy clad stem and minor deadwood.	C,1,2	6.1	117.7		Long	
T69	Beech	13.0	360.0	1.0	7.0	3.0	7.0	2.0	3.0	E	Middle Age	Fair	Bifurcate at 2.5m; codominent stems with included union. Crown weighted east; no branches on western stem.	B,1,2	4.3	58.6		Long	
T70	Rowan	10.0	290.0	1.0	1.0	2.0	1.0	3.0	2.0	E	Middle Age	Fair	Garden tree. Bifurcate mid-stem; leaning stem and narrow crown. Minor pruning wound and decay on stem. Peeling bark and epicormics at base.	C,1	3.5	38.0		Medium	
T71	Elm sp.,	10.0	499.1	5.0	6.0	4.0	6.0	5.0	3.0	E	Middle Age	Fair	Basally multi-stemmed with tight included unions. Minor decay from pruning wounds. Infected with Dutch Elm Disease (D.E.D) but is flowering this year. Weighted north, tree to the south has recently been felled.	C,1	6.0	112.7		Short	

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
T72	Beech	12.0	530.0	1.0	5.0	4.0	5.0	6.0	2.0	SW	Middle Age	Good	0.5m from edge of driveway island. Multistemmed mid-stem with tight included unions. Reasonable branch structure and crown form. Minor stem wound and minor deadwood.	B,1	6.4	127.1		Long	
T73	Elm sp.,	8.0	497.5	11.0	6.0	7.0	5.0	5.0	4.0	E	Middle Age	Fair	Basally multi-stemmed which is likely to be regrowth from an old specimen. Crossing branches; included unions; severe basal rot on roots of old stump. Regrowth infected with D.E.D.	C,1	6.0	112.0		Short	
T74	Sycamore	11.0	530.0	1.0	3.0	4.0	4.0	4.0	5.0	W	Middle Age	Fair	Trifurcate mid-stem. Previously topped to a similar degree as adjacent trees in W68. Regrowth from pruning points and some visible decay pockets and cavities. Ivy clad stem.	B,2	6.4	127.1		Medium	
T75	Sycamore	10.0	330.0	1.0	3.0	3.0	3.0	3.0	2.0	W	Middle Age	Fair	Bifurcate mid-stem with tight included union. Ground raised around stem base. Minor deadwood and reduced vigour.	C,1	4.0	49.3		Medium	
T76	Sycamore	9.0	230.0	1.0	1.0	3.0	4.0	1.0	3.0	SE	Middle Age	Good	Situated on raised planting bed. Stem lean south east and asymmetric crown. Crown raised over driveway.	C,1	2.8	23.9		Long	
T77	Sycamore	16.0	660.0	1.0	4.0	3.0	3.0	4.0	6.0	N	Mature	Poor	Bifurcate mid-stem. Major dieback. crossing branches. Previously crown reduced; large decay cavities and stem wounds on main stem at pruning points. Mosses and ferns growing on stem and from cavities.	B,3	7.9	197.1		Medium	
T78	Sycamore	15.0	740.0	1.0	2.0	2.0	3.0	4.0	6.0	W	Mature	Poor	Bifurcate mid-stem. Minor crown reductions and previously crown raise for overhead line clearance. Major dieback; numerous decay cavities; epicormics on stem.	B,3	8.9	247.7		Medium	
T79	Japanese larch	8.0	270.0	1.0	2.0	3.0	4.0	1.0	2.0	S	Middle Age	Good	Situated in planting bed. Slight stem lean and crown weighted east. Healthy vigorous tree. Ivy clad at base.	C,1	3.2	33.0		Long	
T80	Sycamore	6.0	290.0	1.0	4.0	3.0	3.0	4.0	2.0	NW	Middle Age	Good	Situated on edge of old fence line and next to small brick utility structure. Reasonable form, crown weighted slightly west. Wire included in tree but no significant defects.	C,1	3.5	38.0		Long	
T81	Apple sp.,	3.0	176.8	2.0	0.5	3.0	2.0	2.0			Middle Age	Fair	Planted up against boundary wall and leaning out from the wall. Asymmetric crown and previously pruned.	C,1	2.1	14.1		Medium	
T82	Bay laurel	3.0	200.0	1.0	2.0	2.0	2.0	2.0	1.0		Middle Age	Good	Basally multi-stemmed, a dense bush situated along the fence line.	C,1	2.4	18.1		Long	

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
T83	Sycamore	7.0	250.0	1.0	1.0	3.0	2.0	3.0	1.5	S	Middle Age	Good	Growing up against wall. Asymmetric crown weighted south. Good vigour.	C,1	3.0	28.3		Long	
T84	Hawthorn	3.0	212.1	2.0	2.0	2.0	2.0	2.0	1.0	E	Middle Age	Good	Basally bifurcate. Self sown; dense crown and minor stem wounds.	C,1	2.5	20.4		Long	
T85	Ornamental thorn sp,.	3.0	180.0	1.0	2.5	2.5	1.0	3.0	1.5	W	Middle Age	Good	Ornamental tree growing close to boundary wall. Asymmetric crown.	C,1	2.2	14.7		Long	
T86	Sycamore	7.0	380.0	1.0	4.0	3.0	3.0	3.0	1.0	N	Middle Age	Fair	Vigorous tree growing close to boundary wall. Bifurcate mid-stem with tight union. 1 stem suppressed. Dense crown.	C,1	4.6	65.3		Long	
T87	Hawthorn	3.0	223.6	2.0	1.0	3.0	0.5	3.0	1.0	W	Middle Age	Fair	Growing under canopy of adjacent tree 1m from boundary wall. Asymmetric crown.	C,1	2.7	22.6		Long	
T88	Hawthorn	4.0	223.6	2.0	2.0	2.0	1.0	3.0	1.0	W	Middle Age	Good	Basally twin stemmed. Growing close to boundary wall with asymmetric crown. Good health.	C,1	2.7	22.6		Medium	
T89	Sycamore	9.0	565.7	2.0	4.0	4.0	5.0	4.0	2.0	NE	Middle Age	Fair	Bifurcate at 1m; good union and stem abutting wall. Slight bulge on NW side, possibly the result of a previous stem failure which has occluded well. Stem abutting wall and some soil level build up around the buttress. Open grown; good balanced crown form; basal epicormics, minor deadwood and minor cavities. Branches growing into wall vegetation.	B,1	6.8	144.8		Long	
T90	Pear	6.0	310.0	1.0	3.0	2.0	3.0	3.0	3.0	W	Middle Age	Fair	Single stem abutting wall. Typical congested crown form for species. Abundant epicormics; minor deadwood stubs and minor basal cavity. Generally good crown health.	B,1	3.7	43.5		Medium	
T91	Sycamore	8.0	560.0	1.0	4.0	4.0	5.0	5.0	2.0	E	Middle Age	Fair	Single stem abutting wall. Open grown; slightly stunted crown; minor deadwood and reduced vigour in northern crown. Ivy clad and deadwood stubs in lower crown.	B,1	6.7	141.9		Long	
T92	Sycamore	16.0	815.7	4.0	4.0	6.0	6.0	2.0	2.0	E	Middle Age	Fair	On edge of W68. Basally trifurcate but one main stem. Tight forks with included unions. Stems and crown weighted east. Fair crown health; minor deadwood and heavily ivy clad stem.	B,1,2	9.8	301.0		Long	
T93	Sycamore	14.0	820.0	1.0	4.0	4.0	4.0	4.0	2.0		Mature	Good	Trifurcate at 1.5m with tight forks and included unions. Good crown health; minor deadwood and heavily ivy clad stem. Inspection restricted by ivy.	B,1,2	9.8	304.2		Long	

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
T94	Elm sp.,	5.0	310.0	1.0	1.0	4.0	5.0	4.0	1.5	W	Middle Age	Good	Asymmetric crown, suppressed by adjacent tree to the north.	C,1,2	3.7	43.5		Medium	
T95	Silver maple	7.0	280.0	1.0	4.0	3.0	3.0	3.0	2.0	N	Mature	Good	Planted in shrub bed. Well established tree of reasonable form. Trifurcate mid-stem with minor included union. Epicormics on main stem.	C,1	3.4	35.5		Long	
T96	Sycamore	7.0	300.0	1.0	4.0	2.0	3.0	3.0	3.0	N	Middle Age	Good	Planted in bed with box and cornus shrubs. Mid-stem multi-stem. Crown weighted north; ivy clad stem and crown epicormics.	B,1	3.6	40.7		Long	
T97	Sycamore	9.0	700.4	2.0	5.0	4.0	5.0	4.0	3.0	N	Middle Age	Fair	Basally bifurcate. North stem forks again at 1.5m. Low spreading crown. Good vigour and heavily ivy clad stem.	B,1	8.4	221.9		Long	
T98	Sycamore	7.0	420.0	1.0	4.0	5.0	4.0	4.0	3.0		Middle Age	Good	Situated in more open area of garden with more woodland species and small groups. Open grown; squat crown; slight stem lean and crown weighted south.	B,1	5.0	79.8		Long	
T99	Common ash	9.0	482.7	2.0	5.0	6.0	6.0	6.0	5.0	N	Middle Age	Good	Basally twin stemmed with good union. Single crown and open grown form. Minor crown raised to north and minor basal wound with old fungal bracket.	B,1	5.8	105.4		Long	
T100	Cotoneaster	3.0	110.0	1.0	2.0	4.0	0.5	2.0	1.0		Middle Age	Good	Growing upright against wall. Stem lean south and crown weighted south.	C,1	1.3	5.5		Long	
T101	Common ash	10.0	368.0	2.0	5.0	4.0	3.0	3.0	2.0		Middle Age	Good	Basally twin stemmed. Good vigour and open grown form. Young hawthorn growing at stem. base	B,1	4.4	61.3		Long	
T102	Yew	6.0	320.5	3.0	3.0	3.0	6.0	1.0	3.0	E	Middle Age	Fair	Situated at end of old yew hedge line. Trifurcate at 1m. Asymmetric crown weighted east.	B,2	3.8	46.5		Long	
T103	Weeping willow	5.0	110.0	1.0	1.0	2.0	1.0	1.0	1.0	S	Young	Good	Young open grown tree. Good quality specimen.	C,1	1.3	5.5		Long	
T104	Common ash	12.0	470.0	1.0	6.0	6.0	5.0	5.0	3.0		Middle Age	Good	Open grown tree with no significant defects. Mid-stem multi-stem ;good form and long term potential.	B,1,2	5.6	99.9		Long	
T105	Common ash	10.0	320.0	1.0	3.0	4.0	4.0	1.0	3.0	SE	Middle Age	Fair	Suppressed by adjacent tree and has asymmetric crown. Ivy clad stem and epicormics.	C,1	3.8	46.3		Long	
T106	Himalayan birch	5.0	120.0	1.0	2.0	1.0	2.0	1.0			Young	Good	Open grown tree in grassed area. Minor stem wound.	C,1	1.4	6.5		Long	
T107	Red oak	4.0	190.0	1.0	3.0	3.0	3.0	4.0			Young	Good	Young but established within grassed area. Low spreading crown and some strimmer damage.	C,1	2.3	16.3		Long	

APPENDIX 1: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
T108	Sycamore	10.0	450.0	1.0	5.0	4.0	5.0	4.0	1.5	W	Middle Age	Fair	Low branching at 1.5m with included branch/stem unions Poor branch structure and untidy form. Central leader previously failed; minor deadwood; crown raised with flush cuts and crown epicormics.	B,1	5.4	91.6		Long	
T109	Sycamore	10.0	520.0	1.0	3.0	4.0	4.0	3.0	5.0	W	Middle Age	Fair	Heavily ivy clad; girdling roots and stem and crown weighted east. 2 large included unions with active shear cracks. Compression buckling on underside of stem with adventitious root on underside of lean.	U	0.0	0.0	Fell.	Short	
T110	Sycamore	13.0	530.0	1.0	5.0	5.0	5.0	5.0	5.0		Middle Age	Good	Previous stem removal with old wound and decay cavity. Basal epicormics. Dense crown, good form and vigour.	B,1,2	6.4	127.1		Long	
T111	Sycamore	13.0	584.7	3.0	4.0	4.0	4.0	4.0			Middle Age	Fair	Trifurcate at 1m with tight included unions. Upright stem and reasonable crown form. Previous stem removal with old decay wound. Sparse northern crown.	B,1,2	7.0	154.7		Long	
T112	Cherry sp,.	5.0	220.0	1.0	1.0	2.0	3.0	1.0	2.0	SE	Middle Age	Good	Stem lean and crown weighted east. Bifurcate at 2m. No significant defects.	C,1	2.6	21.9		Long	
T113	Sycamore	11.0	510.0	1.0	7.0	5.0	4.0	5.0	1.5	S	Middle Age	Fair	Situated on path edge. Large low branch to south with congested bark on underside. Minor deadwood and failures and crown epicormics.	B,1,2	6.1	117.7		Long	
T114	Sycamore	10.0	468.5	3.0	3.0	4.0	4.0	1.0	2.0	E	Middle Age	Fair	Basally trifurcate. Asymmetric crown weighted east due to suppression from adjacent tree. Good vigour; Ivy clad and minor failures.	C,1,2	5.6	99.3		Long	
T115	Sycamore	14.0	600.0	1.0	6.0	6.0	4.0	4.0			Middle Age	Good	Bifurcate mid-stem with narrow fork. Good from; slightly sparse in southern crown; ivy clad and minor deadwood.	B,1,2	7.2	162.9		Long	
T116	Common ash	11.0	565.7	2.0	4.0	4.0	2.0	3.0	4.0	S	Middle Age	Poor	Bifurcate at 0.5m. Moderate dieback, sparse in north and east of crown. Several pruning wounds with poor occlusion. Cracking bark at base and possible root decay in northern stem buttress. Moderate deadwood.	C,1,2	6.8	144.8		Medium	
T117	Sycamore	12.0	461.2	4.0	3.0	3.0	3.0	3.0	2.0	W	Middle Age	Good	4 stems close together have narrow crowns that form a single canopy. Ivy clad stems. Small stem has asymmetric crown.	B,1,2	5.5	96.2		Long	

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
T118	Beech	15.0	820.0	1.0	8.0	7.0	7.0	6.0	4.0	S	Mature	Good	Situated on undefined garden boundary of Homewood property. Bifurcate at 1.5m. Large open grown specimen with good form and balanced crown. Good vigour and no significant defects. Some crossing branches and minor branch stubs from pruning over the adjacent garden.	A,1	9.8	304.2		Long	
T119	Sycamore	12.0	620.0	1.0	6.0	6.0	5.0	4.0	2.0	N	Middle Age	Good	Situated along garden boundary abutting wall. Reasonable form and good crown health. Minor stem cavity; ivy clad and debris at stem base.	B,1,2	7.4	173.9		Long	
T120	Common Pear	8.0	424.3	2.0	3.0	3.0	2.0	4.0	2.0	S	Mature	Fair	Situated in shrub bed. Bifurcate at 1m. Good quality specimen with no significant defects. Asymmetric crown; minor branch failures and wounds. Ferns and mosses in crown.	B,1	5.1	81.4		Long	
Groups																			
G67	Beech	10 to 12	150 to 450	6.0	5.0	5.0	3.0	3.0			Middle Age	Good	2 small trees 150mm diam, 4 larger trees 450mm diam. Linear group running parallel with stone pillar and forms defined edge of woodland and lawn area. Closely planted at 0.5m to 1m spacing. Previous crown lifted; weighted north; Ivy clad and minor deadwood.	B,2	Refer to Drawing	n/a		Long	
G68	Sycamore	10 to 13	200 to 450	18.0							Middle Age	Fair	Small wooded group of sycamore with occasional holly and elder. Some trees have reduced vigour. Slender narrow formed trees in centre and asymmetric crowns at group edge. Ivy clad stems and minor crown deadwood.	B,2	Refer to Drawing	n/a		Long	
G69	Camellia	2 to 3	150 to 200	2.0							Middle Age	Good	2 low growing ornamental shrubs in bed at garden edge. Crowns weighted west away from wall.	C,2	Refer to Drawing	n/a		Long	
G70	Cornus, willow, rasberry	2.0	0.0								Middle Age	Good	Ornamental shrubs managed as a hedge with arch. Multi-stemmed willow and raspberry to the north and dense cornus to the south.		Refer to Drawing	n/a		Long	
G71	Apple sp.,	3.0	100 to 125	4.0							Middle Age	Fair	4 trees in small orchard area planted at 2m spacing. Multi-stemmed, low spreading form. Minor wounds and cavities at pruning points.	C,1	Refer to Drawing	n/a		Medium	

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
G72	Bird cherry	7.0	200 to 400	5.0							Middle Age	Varied	Linear group situated 1m from boundary wall. Scrubby trees with asymmetric crowns weighted east, previous branch failures and abundant sucker growth. 1 larger has failed at the root plate and is grounded.	C,1,2	Refer to Drawing	n/a		Medium	
G73	Elder , sycamore	2 to 4	100 to 200								Young to Middle Age	Fair	Dense shrubby area, mostly multistemmed alder. Occasional young self sown elm and sycamore. Numerous failures.	C,1,2	Refer to Drawing	n/a		Long	
G74	Snake bark maple, cotoneaster, dawn redwood, walnut, cherry sp, spotted laurel, Portuguese laurel, , berberis, holm oak, amelachier, lapuama	7.0	160 to 240								Young to Middle Age	Good	Landscaped shrub beds within an area of the private garden. Dense shrub layer with several young but established trees present. Good quality specimens and diverse species mix.	C,1,2	Refer to Drawing	n/a		Long	
G75	Fastigiated yew	7.0	450 to 750	20.0							Middle Age	Good	Linear group planted along the garden boundary wall. Striking feature from within the garden and also visible from outside the grounds to the south due to the slightly elevated position. All basally multi-stemmed and in good health. Previous pruning on lower stems for footpath clearance. Mosses and ferns growing on the trees.	A,1,2,3	Refer to Drawing	n/a		Long	
G76	Cotoneaster	3.0	100.0	3.0							Middle Age	Good	3 cotoneaster trees forming low growing collective canopy. Previously pruned.	C,2	Refer to Drawing	n/a		Long	
G77	Ash, hawthorn	5 to 11	250 to 450	13.0							Middle Age	Good	Mainly ash with 3 hawthorns, generally in good condition. Varied canopy structure; trees on east of group are growing within the line of several yew stumps.	B,1,2	Refer to Drawing	n/a		Long	
G78	Common ash, sycamore	10 to 13	300 to 500	8.0							Middle Age	Fair	Similar in character as adjacent group following line of old yew stumps. Varied condition; minor deadwood; crossing branches and stem wounds.	B,2	Refer to Drawing	n/a		Long	

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Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
G79	Fastigiated yew	6.0	100 to 200	14.0							Middle Age	Fair	Remaining section of a line of yew which have been largely removed to south of garden. The yew would have been a formal hedge feature running around the garden edge. This section is crowded out by the adjacent ash. Multi-stemmed; upright form; dense stems; sparse crowns and reduced vigour.	C,2	Refer to Drawing	n/a		Medium	
G80	Sycamore	12.0	380 to 450	4.0							Middle Age	Good	4 open grown trees at approx. 4m spacing and forming a collective canopy. Generally good condition; minor deadwood and minor stem wounds.	B,1,2	Refer to Drawing	n/a		Long	
G81	Common ash	10 to 12	230 to 360	6.0							Middle Age	Fair	6 open grown trees at approx. 4m spacing and forming a collective canopy. Generally fair condition; epicormics and moderate basal stem wounds on 2 trees.	B,2	Refer to Drawing	n/a		Long	
G82	Common ash	10 to 12	480 to 500	2.0					4.0	E	Middle Age	Good	2 trees forming collective canopy. Both trees growing close to low walled structures. Generally good health and condition; minor failures and minor stem wounds.	B,1,2	Refer to Drawing	n/a		Long	
G83	Holly	4.0	100 to 200	6.0							Middle Age	Fair	Linear group in shrub bed. Pruning wounds; ivy clad; dieback of suppressed stems and minor deadwood.	C,1,2	Refer to Drawing	n/a		Long	
G84	Cotoneaster, silver maple, red oak, Portuguese laurel	3 to 6	125 to 250	9.0							Young to Middle Age	Good	Ornamental trees within shrub bed. Young but established trees. Predominantly cotoneaster.	C,1	Refer to Drawing	n/a		Long	
G85	Sycamore	9.0	300 to 390	3.0							Middle Age	Fair	Asymmetric crowns due to proximity to adjacent ash. Epicormics in crowns; minor deadwood; stem leaning west and slightly sparse crowns. Northern tree is open grown with a balanced crown.	B,1,2	Refer to Drawing	n/a		Long	
G86	Yew	6 to 8	200 to 400	circa 80							Middle Age	Good	Linear grown of yew forming closely planted hedge. Trees on either end have asymmetric crown spread. Dense stems, basal epicormics and sparse canopies. Some cotoneaster in understory.	B,2,3	Refer to Drawing	n/a		Long	
G87	Wild cherry	10.0	210 to 310	6.0							Middle Age	Good	Planted at 2-4m spacing and form collective canopy. Good health and no significant defects.	B,2	Refer to Drawing	n/a		Long	
G88	Cotoneaster, cherry	2 to 4	100 to 150	10.0							Young	Good	Scattered young trees situated along boundary wall. An even mix of cotoneaster and cherry.	C,2	Refer to Drawing	n/a		Long	

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
G89	Cotoneaster	2 to 5	100 to 180	2.0							Young to Middle Age	Good	1 young and 1 established tree situated along wall edge. Asymmetric crowns weighted east.	C,1,2	Refer to Drawing	n/a		Long	
G90	Holly	4.0	200 to 220	4.0							Middle Age	Good	3 main trees at 2m spacing forming collective canopy. Dense canopy and good understory cover.	B,2	Refer to Drawing	n/a		Long	
G91	Sycamore	14.0	280 to 410	6.0							Middle Age	Good	Narrow crowns forming collective canopy. Ivy clad stems; minor deadwood and epicormics. Holly and cherry understory.	B,2	Refer to Drawing	n/a		Long	
G92	Cherry sp,.	5 to 8	100 to 150	15.0							Young to Middle Age	Fair	East side of garden path. Cherry form majority of cover and is the same in structure as group west of path. Slender stems and narrow crowns. Some ivy clad stems; branch failures; minor deadwood and asymmetric crowns.	C,1,2	Refer to Drawing	n/a		Long	
G93	Cherry sp,.	5 to 8	100 to220	33.0							Middle Age	Good	West side of garden path. Cherry form majority of cover and is the same in structure as adjacent group. Open canopy structure; ivy clad stems, minor deadwood and failures. Mostly good health and condition.	B,2	Refer to Drawing	n/a		Long	
G94	Common ash	13.0	500.0	6.0							Middle Age	Good	Basally multi-stemmed trees in open woodland area to rear of Homewood property. Scattered trees but form collective canopy. Ivy clad stems.	B,2	Refer to Drawing	n/a		Long	
G95	Leyland cypress	4.0	100.0	6.0							Young to Middle Age	Fair	Small line of cypress along garden boundary. Varied height and gappy.	C,2	Refer to Drawing	n/a		Long	
G96	Cherry, willow	4 to 11	100 to 200	6.0							Middle Age	Good	Mostly cherry with 2 young vigorous willow. Cherry structure is the same as the group to the east. Dense asymmetric crowns.	C,2	Refer to Drawing	n/a		Long	
G97	Sycamore	11 to 13	400 to 460	2.0							Middle Age	Good	2 of the better quality trees in the garage area. Good form and branch structure. Minor deadwood; basal epicormics; stem lean and crowns weighted north.	B,1,2	Refer to Drawing	n/a		Long	
G98	Ash, Sycamore	8 to 11	300 to 500	7.0							Middle Age	Fair	3 trees to rear and 3 trees to the west of the garage. All trees generally have poor form and are basally multi-stemmed with tight included unions. Previously pruned and reduced vigour.	C,1,2	Refer to Drawing	n/a		Medium	

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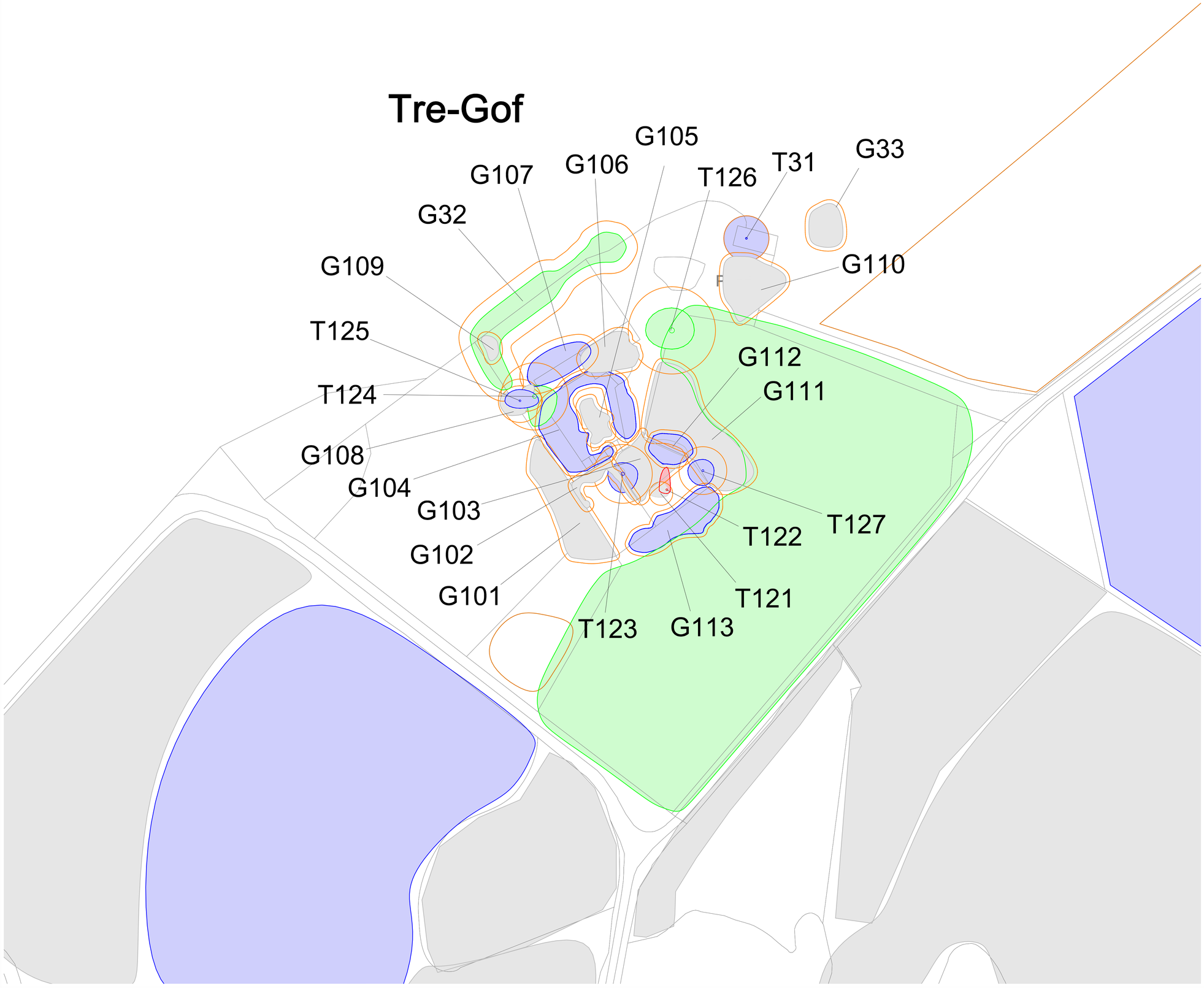
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
G99	Ash	10.0	300 to 600	2.0							Middle Age	Good	Basally multi-stemmed trees situated to the east of the garage. Good vigour and no significant defects. Understory cornus shrub bed. Stems 2m from garage and branches overhang up to 4m.	B,2	Refer to Drawing	n/a		Long	
G100	Cotoneaster	2 to 4	100 to 125								Young to Middle Age	Good	Small dense canopy in shrub bed comprising spotted laurel and Portuguese laurel.	C,2	Refer to Drawing	n/a		Long	

DRAWING 1

TRE-GOF FARM TREE LOCATION PLAN

Tre-Gof



KEY

- T1 Trees
- G1 Groups
- W1 Woodland Compartments
  (Refer to D2977.002 & .003 for further detail on Trees, Groups and Woodlands surveyed in 2011)
- T1/G1 Provisional Tree/Group Number
  (Surveyed March 2013)
- Uncategorised Vegetation
- Root Protection Area
- High Value Features
- Medium Value Features
- Low Value Features
- Features Unsuitable for Retention

Value designations incorporate BS 5837 categories for individual trees and groups and the quality criteria for woodlands

Rev	Description	Drawn	Approved	Date

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LAND & LAKES LIMITED

Project

Penrhos Holiday Village
Holy Island, Isle of Anglesey

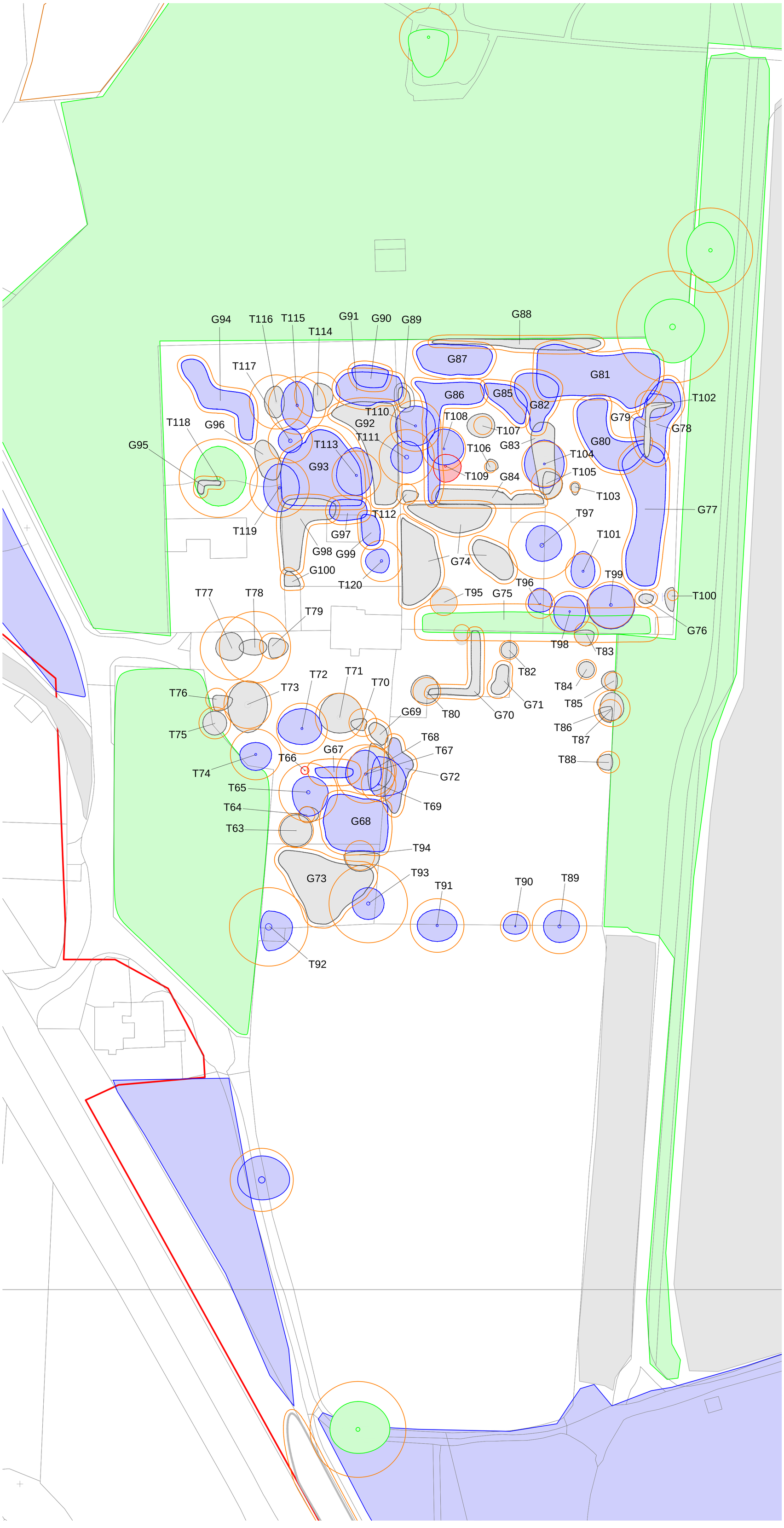
Title

Tre-Gof Farmstead, Cae Glas
Tree Location Plan

Drwg No		
D2977.007		
Scale: 1:500 @ A1		Date: 03/04/13
Drawn: ROS	Checked: TDP	Approved: JGS

DRAWING 2

PENRHOS FARM TREE LOCATION PLAN



KEY

	T1	Trees
	G1	Groups
	W1	Woodland Compartments

(Refer to D2977.002 & .003 for further detail on Trees, Groups and Woodlands surveyed in 2011)

T1/G1 Provisional Tree/Group Number
(Surveyed March 2013)

- Uncategorised Vegetation
- Root Protection Area
- High Value Features
- Medium Value Features
- Low Value Features
- Features Unsuitable for Retention

Value designations incorporate BS 5837 categories for individual trees and groups and the quality criteria for woodlands

Rev	Description	Drawn	Approved	Date

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LAND & LAKES LIMITED

Project

Penrhos Holiday Village
Holy Island, Isle of Anglesey

Title

Penrhos Farm, Penrhos
Tree Location Plan

Drwg No
D2977.008

Scale	Date
1:500 @ A1	02/04/13

Drawn	Checked	Approved
ROS	TDP	JGS