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28th January 2019

Dear Darran,

Minera, Gwynfryn

Further to our recent discussion, we carried out an updated tree survey at Gwynfryn, Minera on 25th January 2019. The survey was carried out in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.

The results of the survey, provided in the attached documents are intended to provide the design team with sufficient information to make balanced judgements and informed decisions about conflicts between the proposed design and the above and below tree constraints on site including those outside of the site boundary (where applicable) which may extend into the site above or below ground. This process ensures that the sustainability of the resulting landscape, in relation to existing trees, has been properly considered.

The following information and attached tree schedules and plans, have been undertaken with no reference to previous surveys and have been intended to record as much detail as possible in regard to the tree features recorded.

The following documents are attached:

1. Tree Schedule (190128-1.2-MG-TS-MW)
2. Tree Constraints Plan (190128-1.3-MG-TCP-NC, in .dwg and .pdf)
3. Decision process in relation to design near to trees (TEP-Designing Near Trees-Decision Flowchart.pdf)

Above-ground constraints consist of tree stems and canopies, for which a range of measurements are provided to aid any proposed design. Canopies are shown on the TCP as green outlines. The below-ground constraints are tree roots, shown on the Tree Constraints Plan (TCP) as Root Protection Areas (RPAs). RPAs are a layout design tool, indicating the minimum area around a tree deemed to contain sufficient roots and soil volume to

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maintain the tree's viability. RPAs should be treated as a precautionary area within which activities such as ground compaction, excavation, storing of materials, ground stripping, raising of levels and building are likely to cause damage to trees and should therefore be avoided.

Please note that the Phase 1 information provided above is not normally sufficient to accompany and validate a planning application. Normally an Arboricultural Impact Assessment and Tree Protection Plan (Phase 2, *RIBA Stages 3-4*) are required. *These documents will need to reference the emerging design and the juxtaposition of trees, and can be provided once the design has been finalised prior to submission of a planning application.*

Summary of Phase 1 Material Tree Constraints

17 individual trees and 4 tree groups have been assessed during this stage that are located within the site boundary or located outside of the site boundary, but are close enough to potentially influence or be influenced by the proposal.

These trees, tree groups and hedges have been assigned the following quality and value categories, according to the BS5837 categorisation process:

- None of the trees have been assessed as **Category A** 'trees of high quality'.
- 7 trees have been assessed as **Category B** 'trees of moderate quality', and as such are likely to be considered by the local planning authority as posing a significant material constraint.
- 9 trees and 4 tree groups have been assessed as **Category C** 'trees of low quality', and whilst still a 'material consideration' are likely to be considered by the local planning authority as posing a minimal constraint.
- 1 tree has been assessed as **Category U** 'those in such a condition that they cannot realistically be retained' regardless of land use and as such pose no constraint on development.

RPAs, shown as red circles around each tree on the Tree Constraints Plan are a layout design tool, indicating the minimum area around a tree deemed to contain sufficient roots and soil volume to maintain the tree's viability. Where the surveyor has assessed that tree roots are likely to have grown in a non-uniform pattern, for example, where roots have been obstructed by underground structures, topography, drainage or soil type and structure, the RPA has been modified. This modification is delineated on the Tree Constraints Plan and noted in the Tree Schedule.

Tree Positions

T10, T14-T19 and H20 were not plotted on the topographical base plan and their positions have been estimated on site, using available features present from the base map. It is recommended to confirm the position of these trees before finalising the proposals.

Access Proposals

The proposed access point is currently positioned in the footprint of T16. The ground within the site is also sloped in this area and would need building up. If the access point was repositioned North East, outside of the RPA of T16, the impact on tree roots would be negligible. The ground in that location is also less sloped, with less build up required. Any works for the installation of the access hardstanding should avoid excavation of the existing ground, to prevent potential disturbance of roots.

It should be noted that this survey is not a tree safety inspection. It is carried out in order to inform the planning process. Where clear and obvious hazards have been observed, these have been addressed in the preliminary recommendations in the attached Tree Schedule.

General Advice

Retained trees are an important factor on development sites and indeed a material consideration in the UK planning system. Treework Environmental Practice will support you to best achieve your objectives including delivering a sustainable outcome. Part of this includes the avoidance of unnecessary tree damage. If trees are damaged by the works on the site (e.g., demolition, construction, landscaping), they may decline, die or become unstable.

The attached **Decision Process for Tree Retention Removal and Protection** document provides broad information on how trees can be damaged and what measures can be taken to protect them.

Where trees are retained, or new planting proposed, the objective should also be to achieve a harmonious relationship between trees and structures that can be sustained in the long term. When this relationship is not achieved (e.g., excessive shade and low hanging limbs), conflict can occur that can lead to post completion pressure to remove trees.

Planning officers will normally require a clear rationale for the removal, retention and protection of trees that meets the requirements of national and local policy. Treework Environmental Practice will support this by providing an Arboricultural Impact Assessment report and Tree Protection Plan for submission with the planning application.

If you require clarification or further information at this stage, please do contact me.

Yours sincerely,

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Minera, Gwynfryn

Tree Survey BS5837-2012



Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)				Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m ²)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T1	1	<i>Cupressus sp.</i> Cypress sp.	18.0	1	84	N 6.0	E 6.0	S 6.0	W 6.0	3.5		Mature	Poor	Decline - Evident / observed.			0-10	U	
T2	1	<i>Cupressus sp.</i> Cypress sp.	19.0	1	68	N 5.0	E 5.0	S 5.0	W 5.0	3.5		Mature	Fair	Branch - Suspended. Ivy or climbing plant.	209.2	8.2	20-40	B	1 2
T3	1	<i>Cupressus sp.</i> Cypress sp.	19.0	1	79	N 5.0	E 5.0	S 5.0	W 5.0	3.5		Mature	Fair	Ivy or climbing plant. Stems - Sub-dominant.	282.3	9.5	20-40	B	1 2
T4	1	<i>Cupressus sp.</i> Cypress sp.	19.0	1	48	N 8.0	E 5.0	S 5.0	W 5.0	3.5		Mature	Fair	Competition - Adjacent trees. Ivy or climbing plant.	104.2	5.8	20-40	B	1 2
T5	1	<i>Fraxinus excelsior</i> Ash	11.0	2	51	N 7.0	E 7.0	S 7.0	W 7.0	3.0		Mature	Good	Pollard - Regrown.	118.7	6.1	20-40	C	1
T6	1	<i>Fraxinus excelsior</i> Ash	13.0	1	21	N 4.0	E 4.0	S 4.0	W 4.0	4.0		Early Mature	Good		20.0	2.5	40+	B	1
T7	1	<i>Fraxinus excelsior</i> Ash	13.5	2	38	N 5.0	E 2.0	S 5.0	W 6.0	1.5	0.5	Early Mature	Fair	Lowest branch growing West.	65.6	4.6	10-20	C	1
T8	1	<i>Fraxinus excelsior</i> Ash	13.5	2	38	N 1.0	E 0.0	S 1.0	W 8.0	1.5	0.0	Early Mature	Fair	Poor form, growing West.	65.6	4.6	10-20	C	1
T9	1	<i>Picea sp.</i> Spruce sp.	11.0	1	19	N 2.0	E 2.0	S 2.0	W 2.0	2.0		Early Mature	Good		16.3	2.3	20-40	C	1
T10	1	<i>Picea sp.</i> Spruce sp.	11.0	1	19	N 2.0	E 2.0	S 2.0	W 2.0	2.0		Early Mature	Good	Not on topo. Position estimated.	16.3	2.3	20-40	C	1
G11	16	<i>Corylus avellana</i> Common Hazel	3.5	10	15	N 1.5	E 1.5	S 1.5	W 1.5	0.5		Mature	Fair	Coppice stool - Regrown. Group of Hazel around 3-4m spacings.	11.3	1.9	20-40	C	3

Minera, Gwynfryn

Tree Survey BS5837-2012



Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)				Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m ²)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
G12	7	<i>Corylus avellana</i> Common Hazel	3.5	10	15	N 1.5	E 1.5	S 1.5	W 1.5	0.5		Mature	Fair	Coppice stool - Regrown. Group of Hazel around 3-4m spacings.	11.3	1.9	20-40	C	3
G13	10	<i>Laurocerasus sp.</i> Laurel	5.0	5	33	N 5.0	E 5.0	S 5.0	W 5.0	0.0		Mature		Count estimated.	50.9	4.0	20-40	C	2
T14	1	<i>Acer pseudoplatanus</i> Sycamore	20.0	1	81	N 8.0	E 8.0	S 8.0	W 8.0	9.0		Mature	Fair	Ivy or climbing plant. Tree on bank, dense Ivy cover. Not on topo. Position estimated.	296.8	9.7	20-40	C	1
T15	1	<i>Acer pseudoplatanus</i> Sycamore	20.0	3	96	NW 8.0	NE 12.0	SE 8.0	SW 8.0	9.0		Mature	Fair	Ivy or climbing plant. Tree on bank, dense Ivy cover. Not on topo. Position estimated.	421.9	11.6	20-40	C	1
T16	1	<i>Corylus avellana</i> Common Hazel	9.0	15	38	N 5.0	E 5.0	S 5.0	W 5.0	1.5		Mature	Fair	Coppice stool - Coppice origin / Mature stems. Not on topographical survey, position measured from railing.	67.9	4.6	10-20	C	3
T17	1	<i>Fraxinus excelsior</i> Ash	18.0	1	84	N 8.5	E 8.5	S 8.5	W 8.5	5.0		Mature	Good	Ivy or climbing plant. Root environment - Restricted. Boundary tree, adjacent road. Not on topographical survey, position estimated from opposite railing.	319.2	10.1	40+	B	1
T18	1	<i>Quercus sp.</i> Oak sp.	13.5	1	92	N 7.0	E 7.0	S 7.0	W 7.0	5.5		Mature	Good	Ivy or climbing plant. Root environment - Restricted. Boundary tree, adjacent road. Not on topographical survey, position measured and estimated from T17.	382.9	11.0	40+	B	1
T19	1	<i>Quercus sp.</i> Oak sp.	12.0	1	77	NW 5.0	NE 1.0	SE 5.0	SW 4.0	5.5		Mature	Good	Ivy or climbing plant. Root environment - Restricted. Boundary tree, adjacent road. Not on topographical survey, position measured and estimated from T18.	268.2	9.2	40+	B	1 3

Minera, Gwynfryn

Tree Survey BS5837-2012

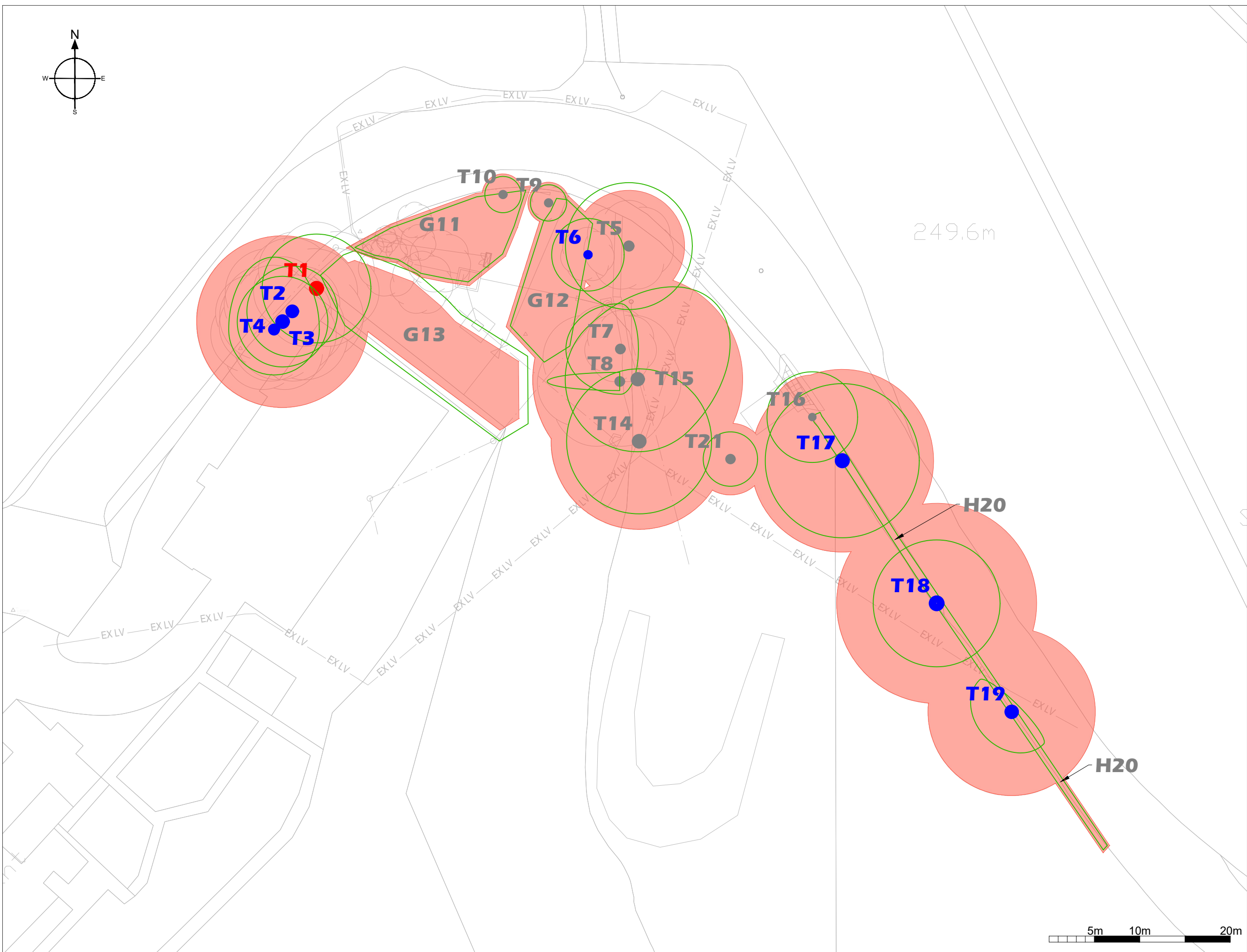
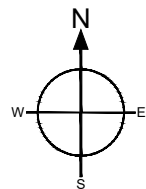


Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)				Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m ²)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
H20	1	<i>Ilex aquifolium</i> Holly	5.0	1	10	N 1.0	E 1.0	S 1.0	W 1.0	0.0		Mature	Fair		4.5	1.2	20-40	C	2 3
	1	<i>Corylus avellana</i> Common Hazel																	
T21	1	<i>Crataegus sp.</i> Hawthorn sp.	20.0	1	33	N 3.0	E 3.0	S 3.0	W 3.0	9.0		Mature	Fair	Ivy or climbing plant. Dense Ivy cover. Not on topo. Position estimated.	49.3	4.0	20-40	C	1 3

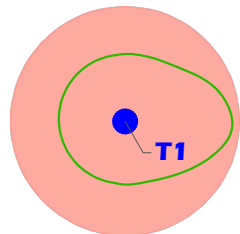
Tree Schedule Key



Tree/Group Reference	Reference number for individual trees or groups of trees, prefixed by T (Tree), G (Group), W (Woodland), H (Hedge) or S (Shrub) to indicate the type of feature.
Tree Count	Number of trees of a particular species recorded within a group feature, with the default value of 1 for single trees.
Species	Scientific name followed by common name (where available).
Height (m)	Tree height to the nearest metre, either measured with a device or estimated. Tree height for group records refers to the estimated average height of trees within the group (unrepresentative trees may be excluded from this estimate).
Stem Count	Number of stems. Stem count indicates whether the tree is single-stemmed or multi-stemmed and informs the RPA calculation.
Stem Diameter (cm)	Stem diameter, measured at 1.5m above ground level in accordance with Annex C of BS5837:2012. Diameters of multi-stemmed trees are presented as a combined stem diameter calculated in accordance with the formulae in Section 4.6.1 of BS5837:2012. Stem diameter for group records refers to the estimated average stem diameter of trees within the group (unrepresentative trees may be excluded from this estimate).
Crown Radius (m)	Distance from stem position to crown periphery in either the four cardinal or four ordinal directions, estimated to the nearest half metre. Crown spreads for group records refer to the estimated average spreads of trees within the group (unrepresentative trees may be excluded from this estimate).
Crown Clearance Height (m)	Distance between the ground and the lowest point of the crown periphery, estimated to the nearest half metre.
Lowest Branch Height (m)	Height of the lowest branch, the removal of which is considered likely to have a significant negative effect on the tree in terms of physiology or in terms of the size of wound created.
Life Stage	Young, Semi-mature, Early Mature, Mature, Late Mature, Ancient or Veteran.
Physiological Condition	Good, Fair, Poor, Dead.
Observations	General description of the tree or tree group, including basic features and morphology, structural and physiological condition, growing conditions and surroundings.
Recommendations	Management recommendations for tree works to address immediate unacceptable risks, or to facilitate development proposals.
RPA (m²)	Minimum area around a tree deemed to contain sufficient roots and rooting soil volume to maintain the tree's viability, in which the protection of roots and soil structure is treated as a priority. Calculated from the stem diameter according to the formulae in BS5837:2012. RPA for group records is based on the estimated average stem diameter of trees within the group (unrepresentative trees may be excluded from this estimate).
RPR (m)	Radius of the RPA, in metres, when this is plotted as a circle around the tree stem.
Remaining Contribution (years)	Estimated number of years for which the tree will continue to make a positive contribution to the site, banded as < 10, 10-20, 20-40, 40 +.
Retention Category	Quality and value category (A , B , C or U) as defined in Table 1 of BS5837: 2012 (reproduced below), where A = high quality and value; B = moderate quality and value; C = low quality and value and U = tree identified for removal due to poor condition regardless of development proposals.
Retention Sub-category	One or more sub-categories (1-3) as defined in Table 1 of BS5837: 2012 (reproduced below), assigned for Categories A , B or C where 1 = arboricultural qualities, 2 = landscape qualities and 3 = conservation and cultural value.



249.6m



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|----|--------------------------------|--|------------------------------------|
| T1 | Tree or Group Reference Number | | Tree Stem Position A Category Tree |
| | Tree Crown | | Tree Stem Position B Category Tree |
| | Root Protection Area | | Tree Stem Position C Category Tree |
| | Tree Survey Boundary | | Tree Stem Position U Category Tree |

Date: January 2019

Scale: 1:400 @ A3

Project Name: Minera, Gwynfryn

Drawing Title: Tree Constraints Plan

Drawing Number: 190128-1.3-MG-TCP-NC



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Decision Process for Tree Retention, Removal & Protection

