

Arboricultural Impact Assessment & Method Statement

Land off Llay Road, Cefn Y Bedd

Prepared for:

MR C SHAW (CHRISTMAS FARM)
C/o Goodwin Planning Services

Our Ref: 22/AIA/WXM/303

August 2022

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1.0 INSTRUCTION

- 1.1 We have been instructed by Mr C Shaw of Christmas Farm to carry out an Arboricultural Impact Assessment (AIA) in order to assess the development proposal in relation to trees in accordance with the principles of British Standard 5837 'Trees in Relation to Design, Demolition & Construction - Recommendations' 2012.
- 1.2 We are instructed to prepare a report in order to provide information to assist all parties involved in the planning process to make balanced judgements regarding arboricultural features in relation to the proposed development and engineering works at Christmas Farm, off Llay Road, Cefn Y Bedd. As such, all trees within influencing distance to the development proposal both on and adjoining the site have been surveyed and are listed within a Tree Survey Schedule (**Appendix 1**) and plotted on all accompanying plans.
- 1.3 The stage 1 tree survey was carried out on 29 July 2022 by Alistair Henderson, Principal Consultant to Tree Solutions Ltd. Our appraisal of the mechanical integrity of trees on the site is enough to inform the current project. The assessment of trees is carried out from ground level without invasive investigation and the disclosure of hidden defects cannot therefore be expected. Whilst the survey is not specifically commissioned to report on matters of tree safety, we report obvious defects that are significant in relation to the existing and proposed land use. We do not carry out detailed safety inspections unless specifically instructed to do so in writing and have not carried out such inspections of trees on the proposal site.
- 1.4 Fourteen individual trees (T1–T14), two groups (G1-G2) and two hedgerows (H1-H2) were surveyed and mapped on a Preliminary Tree Constraints & Impact Assessment Plan Ref: 22/AIA/WXM/303, Drawing No. 1 & 2 at **Appendix 2**. All arboricultural information recorded during the survey is presented within a schedule at **Appendix 1**.
- 1.5 The Arboricultural Impact Assessment is based on the site layout plan Ref: 3034-01-001 provided by Axis.

2.0 STATUTORY CONTROLS & PLANNING POLICY

- 2.1 We have been unable to establish if any trees are subject to a Tree Preservation Order as Wrexham Council do not display this information online. The land does not fall within a designated Conservation Area. You are advised to seek confirmation on this from WCBC prior to undertaking any works to trees.

2.2 Protected Species

- 2.2.1 Mature trees often contain cavities, crevices and hollows that offer potential habitat for species such as bats and barn owls. Both are afforded protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as The Conservation (Natural Habitats, &c) (Amendment) Regulations 2007.

2.3 Wildlife Habitats

- 2.3.1 Trees and hedgerows of most species provide valuable nesting sites for a wide range of birds, and it is likely that nesting birds will be present on the site during the period March to September.

3.0 THE SITE

- 3.1 The site is predominantly open countryside. It contains a large pond area to the west and several mature trees in a number of linear groups. It is bound by established hedgerows.

4.0 DEVELOPMENT PROPOSAL

- 4.1 Proposed mixed use for agricultural (Christmas Tree Farm) and outdoor recreation to include a reindeer centre, paddle boarding, water related activities, engineering operations to extend the existing lake, creation of bark footpath, erection of cedar clad agricultural building to provide office, machine and equipment store, hay/straw storage, sick bay and maternity bay space for reindeer, creation of a car park, creation of a new access.

5.0 GENERAL CONSTRAINTS DATA - CONSTRUCTION EXCLUSION ZONES (CEZ's)

5.1 GENERAL

5.1.1 The three phases of an AIA were outlined in Section 1. In addition, during the development process for retention trees, there may be three and even four constraints to consider: Construction Exclusion Zone (CEZ's):

- CEZ 1: Root Protection Area (see 5.2)
- CEZ 2: Tree Crown Protection (see 5.3)
- CEZ 3: Tree Dominance (see 5.4)
- CEZ 4: New Tree Planting Zone (see 5.5)

CEZ's are explained below:

5.2 CEZ 1: ROOT PROTECTION AREA (RPA)

5.2.1 The RPA, calculated in m², should be protected before and during any demolition/construction works. This ensures the effective retention of trees by safeguarding a reliable quantum of functioning tree roots. The RPA is based on a radial measure from the centre of the tree stem, which is calculated by multiplying the stem diameter by a factor of twelve or by the (mean stem diameter²) x number of stems for multi-stemmed trees. With the AIA 1, the RPA is only shown indicatively on the preliminary TCP, as its shape may be subject to amendment as the design progresses.

5.2.2 During the AIA 2, the derived radial measure is converted by the arboriculturalist into the actual area to be protected, having due regard to prevailing site conditions and how these may have affected the tree(s), particularly in relation to factors affecting their likely rooting disposition. The RPA for each tree should initially be plotted as a circle centred on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution.

5.2.3 The means of protecting the RPA will include the installation of tree protective fencing prior to the start of any demolition or construction work on site. The prohibition of various activities within the RPA must be adhered to (e.g. mechanical excavation, soil stripping, fire lighting, material storage, lowering levels and creating excessive sealed surfacing) and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees or within the RPA.

5.3 CEZ 2: TREE CROWN PROTECTION ZONE

5.3.1 This is the area above ground occupied by the crown (branches) of the tree, along with allowances for working space (safe working area) and if appropriate, for future growth. The extent of CEZ 2 is determined by considering the existing and future crown spread of the tree(s), bearing in mind the possibility of this being modified by an acceptable quantum of pruning.

5.4 CEZ 3: TREE DOMINANCE ZONE

5.4.1 This is the area above ground dominated by the tree in relation to issues of shading, seasonal debris and safety apprehension. This area is calculated by considering the height and spread of the tree relative to the proposed buildings, cross referenced with intended end use. As such, what is assessed is the likely psychological effect of the tree on the end user.

5.4.2 The purpose of identifying CEZ 3 is to protect trees from post development pressure (resentment) by the site's end users, who may, if resentful of the trees, seek to procure excessive pruning treatments or even to have them removed. This is a common Planning Service concern, which has led on many occasions both to refusals of consent and to dismissed Appeals against those refusals.

5.4.3 The means of protecting CEZ 3 is likely to include optimising the site layout and room type (especially in relation to new residential dwellings), such that any adverse psychological impacts of the trees are reduced to an acceptable minimum. Key principles include ensuring adequate separation distances between trees and new buildings, in the context of the buildings' end use relative to the location of the tree(s) and avoiding excessive obstruction by trees of critical solar access.

5.5 CEZ 4: NEW PLANTING ZONE

5.5.1 Refer to landscape plan for details.

6.0 SURVEY METHODOLOGY

6.1 The method used in the preparation of this report is based on the principles of BS 5837: 2012.

1. Tree heights were surveyed to the nearest 1m
2. Trunk diameters were measured by use of forestry girth tape
3. The category assessment (Table 1) on which the trees is based include current and long-term arboricultural, landscape, cultural and conservation values (BS5837: 2012). This table can be found at **Appendix 1**
4. For clarity, the grading system is summarised from **Table 2** of the BS as follows:

U grade – trees for removal, effective for less than 10 years

A grade – trees of high quality and value, effective for more than 40 years

B grade – trees of moderate quality and value, effective for more than 20 years

C grade – trees of low quality and value, effective for 10 years

Note: We have indicated colour coding on the drawing and therefore a monochrome copy should not be relied on.

6.2 SOIL ASSESSMENT

6.2.1 A soil assessment should be undertaken by a competent person to inform decisions relating to:

- the root protection area (RPA)
- tree protection
- new planting design; and
- foundation design to take account of retained, removed and new trees (potential soil subsidence/heave)

Tree Solutions do not undertake soil assessments and the client is advised to seek specialist advice in this respect.

7.0 JUXTAPOSITION OF TREES AND STRUCTURES

7.1 Below ground constraints

- 7.1.1 The below ground constraints are generally summarised as the root protection area (RPA). The shape of the RPA and its exact location will depend upon arboricultural considerations including likely tolerance of the tree to root disturbance; morphology and disposition of the roots when known influenced by past or existing site conditions; soil type and structure; and topography and drainage.
- 7.1.2 The purpose of the RPA is to prevent physical damage to tree roots and to prevent damage to the soil structure. Tree roots are damaged by soil compaction, changes in soil levels or soil contamination which could reduce tree health and/or stability.
- 7.1.3 Root patterns are affected by topography and characteristics of the soil or substrate. Where trees are located within proximity to existing hard standing or underground physical barriers, they are unlikely to have an even distribution of lateral roots due to restrictions in root growth created by compacted sub-grades beneath. The RPA of all trees have been plotted unmodified as there were no significant underground barriers to prevent good radial root spread.

7.2 Underground Services

7.2.1 There are no new service runs proposed within the RPA of trees

8.0 DEVELOPMENT IMPACT TO TREES

- 8.1 Tree Solutions carried out a stage one preliminary tree survey and provided the project architect with a report in which all existing trees and their respective Root Protection Areas (RPA) were identified and plotted on a tree constraints and impact assessment plan. The plans have been amended to incorporate the design and layout advice contained within the stage 1 survey and input from Tree Solutions to ensure the best quality trees can be retained with no adverse construction impacts. We are satisfied that the layout has taken the long-term future of the most important trees and into account and is in accordance with Wrexham County Borough Council Planning Policy EC4, SPG 17 and recommendations contained with BS5837: 2012.
- 8.2 All proposed development work is located outside the designated RPA of trees on and adjoining the site as detailed on the AIA plan at Appendix 2. No trees are proposed for removal and there are no anticipated adverse impacts.
- 8.3 A small section of hedgerow to the west of the existing vehicular access is to be removed to clear the highway visibility splay. This will be replaced by a new strip of hedgerow planted along the inner edge of the splay. The new hedge will quickly establish to ensure a continued natural green boundary treatment.



P1 – southern end of existing pond with G1 & H1 in background



P2 – Tree numbers 1-3 viewed from north



P3 – Reindeer fencing erected along southern boundary with PROW beyond



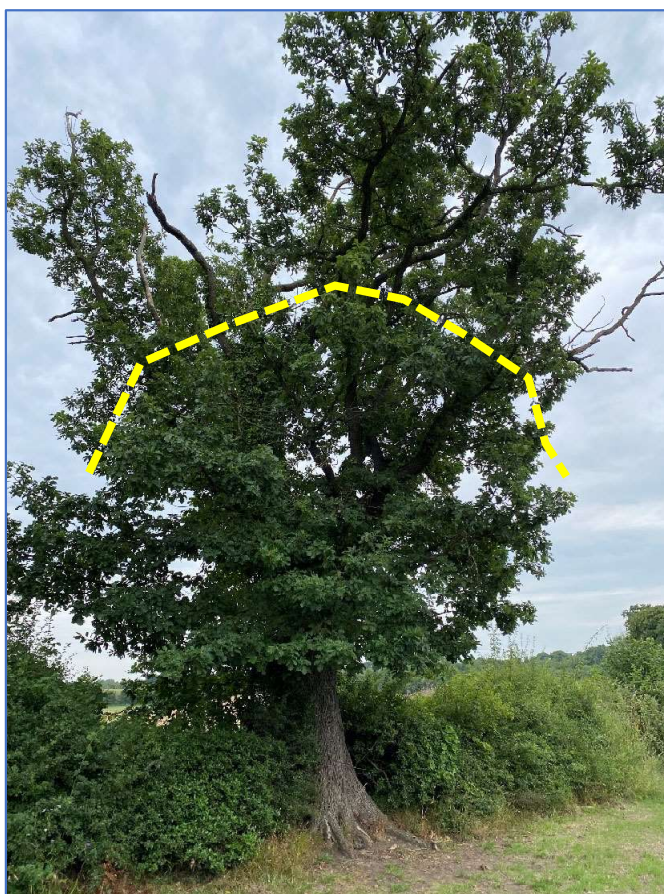
P4 – Tree number 4 (Oak) viewed from north



P5 – Tree numbers 5 & 6 viewed from SE



P6 – Tree numbers 9&10 with watercourse located to their north



P7 – T13 in decline due to Inonotos dryadeus. Tree will be reduced



P8 – Exist of culvert adjacent to T14 – water course extends down into the site

9.0 PROPOSED REVISIONS TO THE SCHEME

- 9.1 We advise that all proposed revisions having implications for trees should be referred to us for review.

10.0 CONCLUSIONS

- 10.1 BS 5837: 2012 contains clear and current recommendations for a best practice approach to the assessment, retention, and protection of trees on development sites. The proposed development has followed this guidance by:

- Seeking arboricultural advice and undertaking a phase 1 preliminary tree survey in order to inform the layout and design of the proposed development
- Respecting the constraints posed to development of the site by high or moderate quality trees
- Acting upon arboricultural advice throughout the design process in order to obtain the best development proposal whilst considering the current and future tree requirements
- No trees are to be removed and none are adversely affected by the development
- Taking the above into consideration, we can see no valid arboricultural grounds for refusal

- 10.2 The protection of retained trees will be in accordance with recommendation contained within the BS and as detailed on the Tree Protection Plan at **Appendix 3**.

11.0 LIMITING CONDITIONS

- Unless stated otherwise:
- Information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of the inspection.
- The inspection is limited to visual examination of the subject trees from ground level only and without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.
- This report has been prepared for the sole use and benefit of the client. Any liability of Tree Solutions shall not be extended to any third party.
- No part of this report can be reproduced without the authorisation of *Tree Solutions Ltd*.

Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE (BS5837: 2012)

SITE:	LAND OFF LLAY ROAD, CEFN Y BEDD, WREXHAM	SURVEYOR:	A HENDERSON
CLIENT:	CHRISTMAS FARM	ASSESSMENT DATE:	29/07/2022
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT	VIEWING CONDITIONS:	GOOD
		JOB REFERENCE:	22/AIA/WX/M/303

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TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N,S,E,W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA.(mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB- CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m ²)
				N	S	E	W						
T1	Oak	M	12	6	7.5	5	7	300 300 500 450 (795)	G	- Edge tree to linear group - Coppiced at 1.2m in past – multi stem above stool - Fire damage at base to south (vandalism) - Fine tree with no significant defects - E.R.C. 40+	No works	A2	9.5 286m ²
T2	Alder	M	10	2.5	3	1	1.5	250x 3 (433)	G	- Past coppiced – decay in stool - E.R.C. 10	Re-coppice	C1	5 85m ²
T3	Oak	M	16	9	9.5	8.5	9.5	1250	G	- Large prominent tree within linear group - No visual defects - E.R.C. 40+	No works	A2	15 707m ²
T4	Oak	M	15	5	7	5	7	1000	G	- Edge tree to linear group - Sitting in heavily saturated ground - No visual defects - E.R.C. 40	No works	A2	12 452m ²
T5	Oak	SM	8 0	2	4	3.5	3	300	G	- Well established edge tree to group - E.R.C. 20	No works	C2	3.6 41m ²

HEADINGS & ABBREVIATIONS

TREE NO.	REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE (T = TREE, G = GROUP, H = HEDGE)
SPECIES:	COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST)
AGE RANGE/LIFE STAGE:	Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE
HEIGHT:	ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE MEASURED USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES
CROWN SPREAD:	MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP)
CROWN CLEARANCE & DIRECTION OF GROWTH:	HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING)
STEM DIA/MULTI-STEM DIA:	STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES
VITALITY:	A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, G = GOOD
E.R.C. = ESTIMATED REMAINING CONTRIBUTION:	RELATIVE USEFUL LIFE EXPECTANCY (YEARS)
BS 5837 CATEGORY & SUB-CATEGORY GRADING:	A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION (SUB-CATEGORY REFERS TO ARBORICULTURAL, LANDSCAPE AND CULTURAL/CONSERVATION VALUES)
BS 5837 RADIUS & BS 5837 RPA:	PROTECTIVE DISTANCE - RADIUS FROM THE CENTRE OF THE STEM TO THE LINE OF TREE PROTECTION (CONSTRUCTION EXCLUSION ZONE - CEZ) AND PROTECTIVE BARRIER ROOT PROTECTION AREA - BS 5837 (2012) ANNEX D (THE RECOMMENDATIONS STATE THAT THE RPA SHOULD BE CAPPED AT 707 MP) NOTE - ALL CALCULATIONS ROUNDED TO NEAREST DECIMAL

TREE SURVEY SCHEDULE (BS5837: 2012)

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BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A HENDERSON
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TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA.(mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m ²)
				N	S	E	W						
T6	Oak	M	13	6	5	6	6	570	G	- Part of linear group - Minor dieback in crown to south - E.R.C. 20+	No works	B2	6.8 147m ²
T7	Oak	EM	17	4	4	4	4	550	G	- No obvious defects - E.R.C. 20	No works	B2	6.6 137m ²
T8	Ash	SM	13	1	2	1.5	2.5	250	G	- Chalara Ash Dieback in crown - E.R.C. <10	Coppice	C2	3 28m ²
T9	Ash	EM	10	4	4	7	4	250 360 (438)	M	- Chalara Ash Dieback in crown - E.R.C. <10	Coppice	C2	5.2 87m ²
T10	Ash	M	15	6	4.5	5	7.5	550	M/G	- Early signs of Ash Dieback evident with tip dieback - E.R.C. 20	Monitor for further decline	B2	6.6 137m ²
T11	Ash	M	17	5	5	5	5	570	M/G	As T10	As T10	B2	6.8 147m ²
T12	Sycamore	M	16	4.5	4	4.5	4.5	550	G	- Within boundary hedgerow with limited access to base of stem impeding inspection - E.R.C. 20+	No works	B2	6.6 137m ²
T13	Oak	M	13	6	4	4	4	800	P	- In decline, top failed and large diameter dead wood/dieback throughout remaining crown - Inonotus dryadeus brackets at base to north and south - E.R.C. 20	Pollard to 5m & retain for biodiversity value	B3	9.6 290m ²

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T14	Sycamore	M	19	6	7	8	5	950	G	- Large prominent tree - Culvert and drainage ditch to north - E.R.C. 40+	No works	A2	11.4 408m²
G1	Willow (Goat) Hawthorn	SM	≤3.5	1.5	1.5	1.5	1.5	≤200	G	- Low grade scrub of no value - E.R.C. 10	Remove if necessary	C3	2.4 18m²
G2	Oak x 2	EM	≤13	6	6	7	5	≤550	G	2 trees forming 1 closed canopy - E.R.C. 40+	No works	B2	6.6 137m²
H1	Hazel Blackthorn Hawthorn	M	≤4.5						G	Unmanaged boundary hedge with interspersed Oaks	Reduce to 2m	N/A	N/A
H2	Hazel Blackthorn	M	≤2						G	- Good quality boundary hedge - Requires annual management	- Remove small section to NE for new vehicular access & visibility splay - Replace with new hedgerow behind visibility splay	N/A	N/A

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	See Table 2
1 Mainly arboricultural qualities		
2 Mainly landscape qualities		
3 Mainly cultural values, including conservation		
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	See Table 2

Appendix Two

Impact Assessment Plan

Approx. 65m hedg
creation of a 161m
splay, reinstated a
trees between the

2m wide bark path, no edgings, at
slacker than 1:20 gradient to the lake.

Legend

- Study site
- Location of the study site
- Location of the study site

Scale

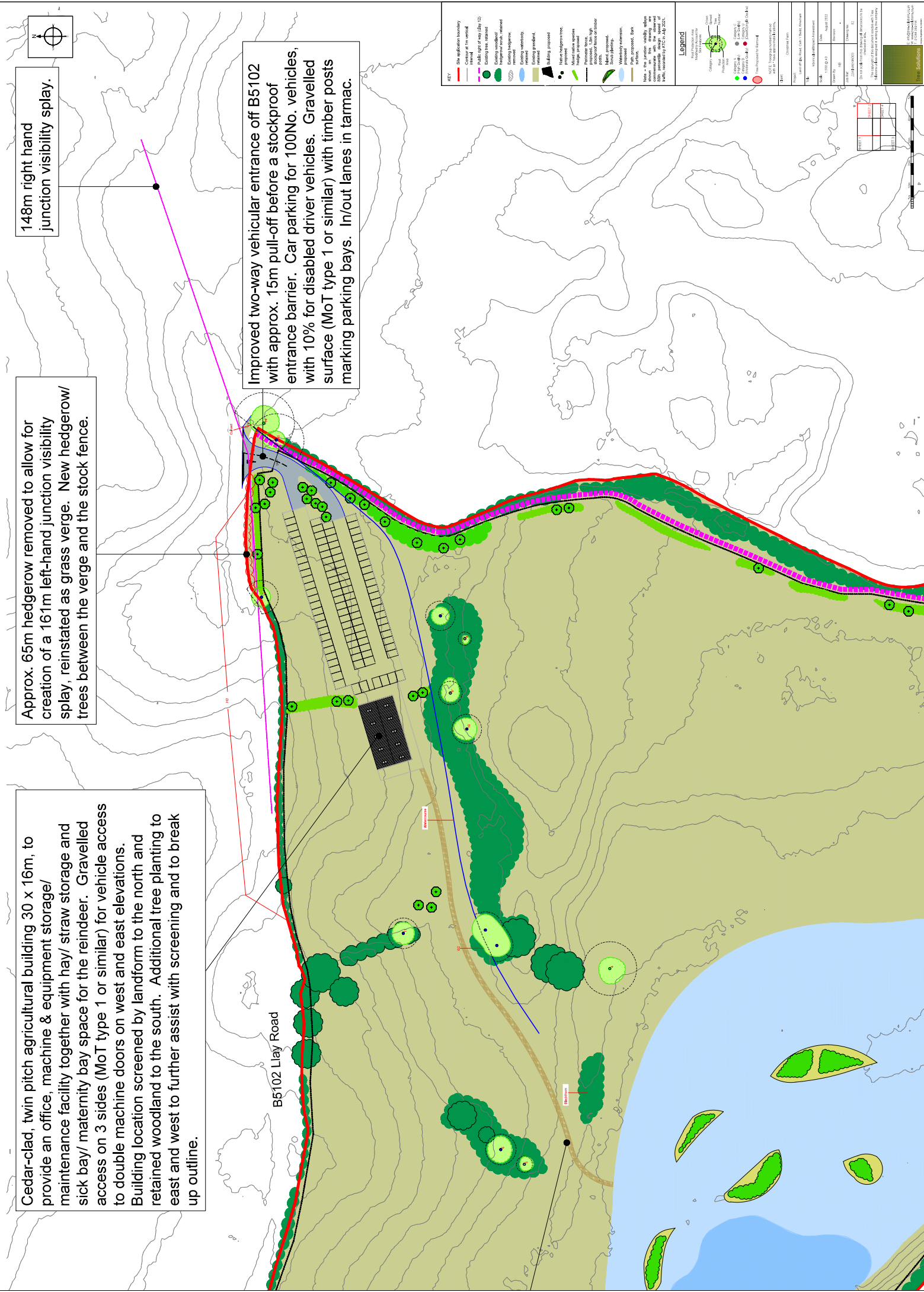
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Cedar-clad, twin pitch agricultural building 30 x 16m, to provide an office, machine & equipment storage/ maintenance facility together with hay/ straw storage and sick bay/ maternity bay space for the reindeer. Gravelled access on 3 sides (MoT type 1 or similar) for vehicle access to double machine doors on west and east elevations. Building location screened by landform to the north and retained woodland to the south. Additional tree planting to east and west to further assist with screening and to break up outline.

Approx. 65m hedgerow removed to allow for creation of a 161m left-hand junction visibility splay, reinstated as grass verge. New hedgerow/trees between the verge and the stock fence.

148m right hand
junction visibility splay.

Improved two-way vehicular entrance off B5102 with approx. 15m pull-off before a stockproof entrance barrier. Car parking for 100No. vehicles, with 10% for disabled driver vehicles. Gravelled surface (MoT type 1 or similar) with timber posts marking parking bays. In/out lanes in tarmac.

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SELECT 1	SELECT 2	SELECT 3
SELECT 4	SELECT 5	SELECT 6



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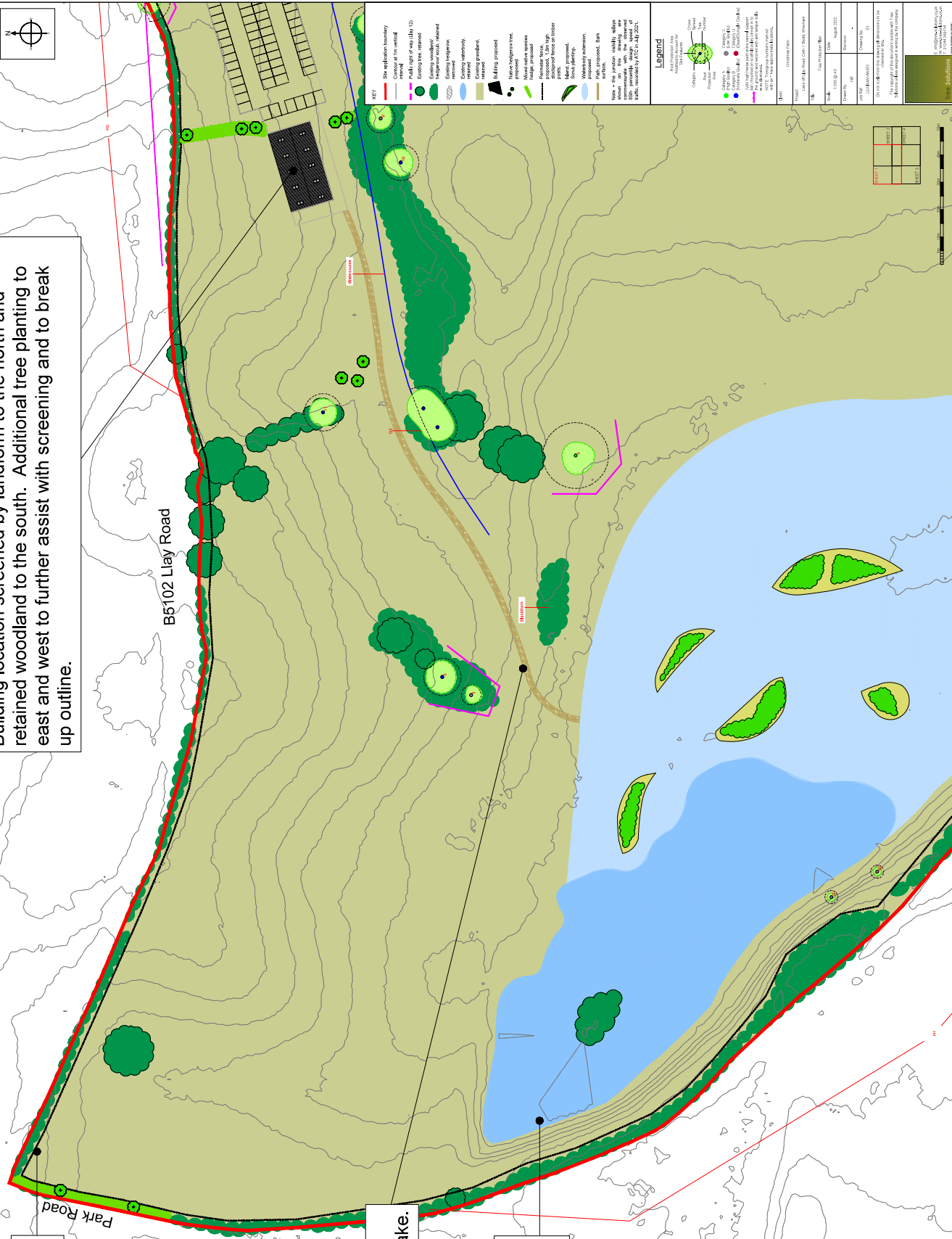
Appendix Three

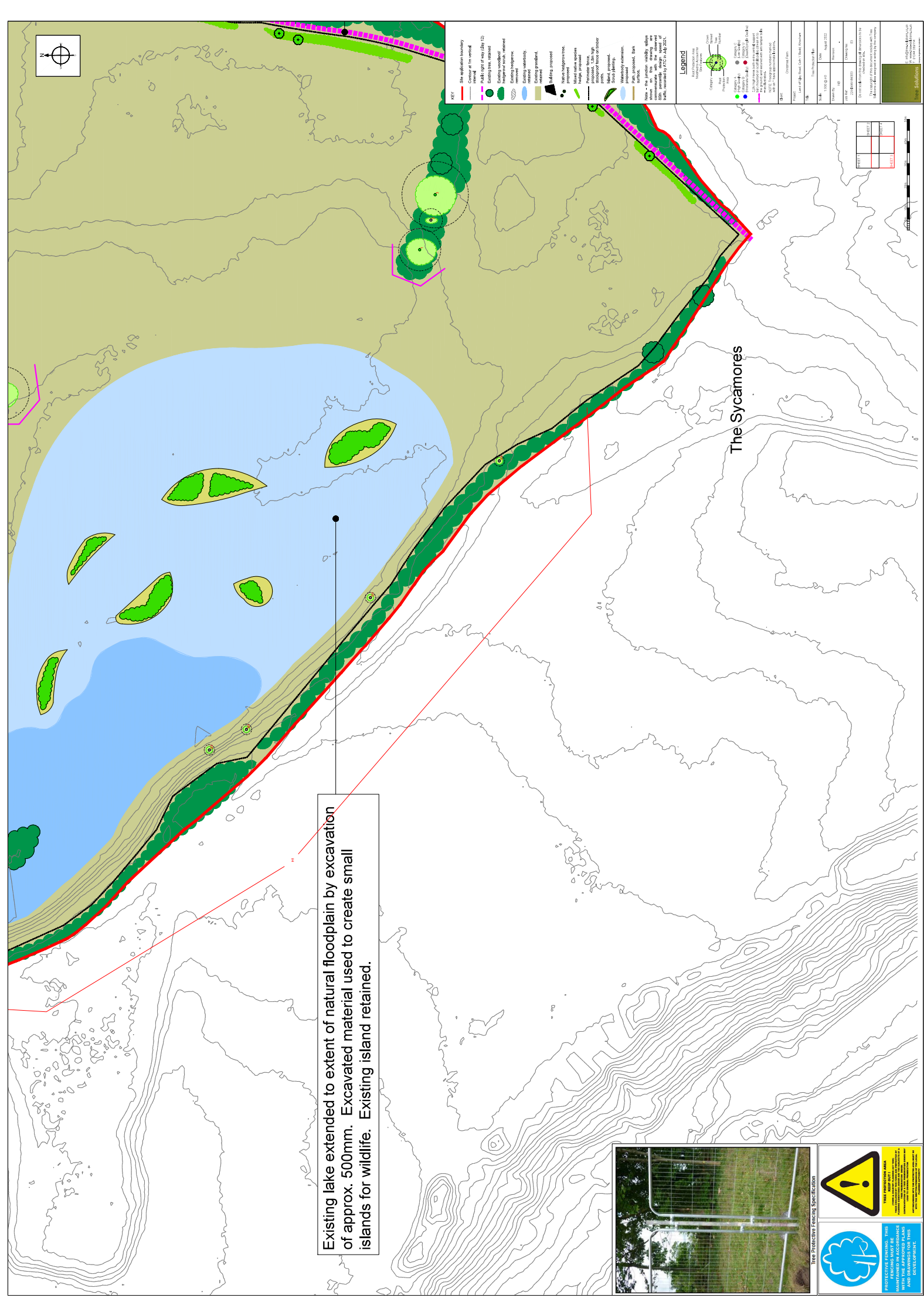
Tree Protection Plan

Approx. 65m hedg
creation of a 161m
splay, reinstated a
trees between the

2m wide bark path, no edgings, at
slacker than 1:20 gradient to the lake.

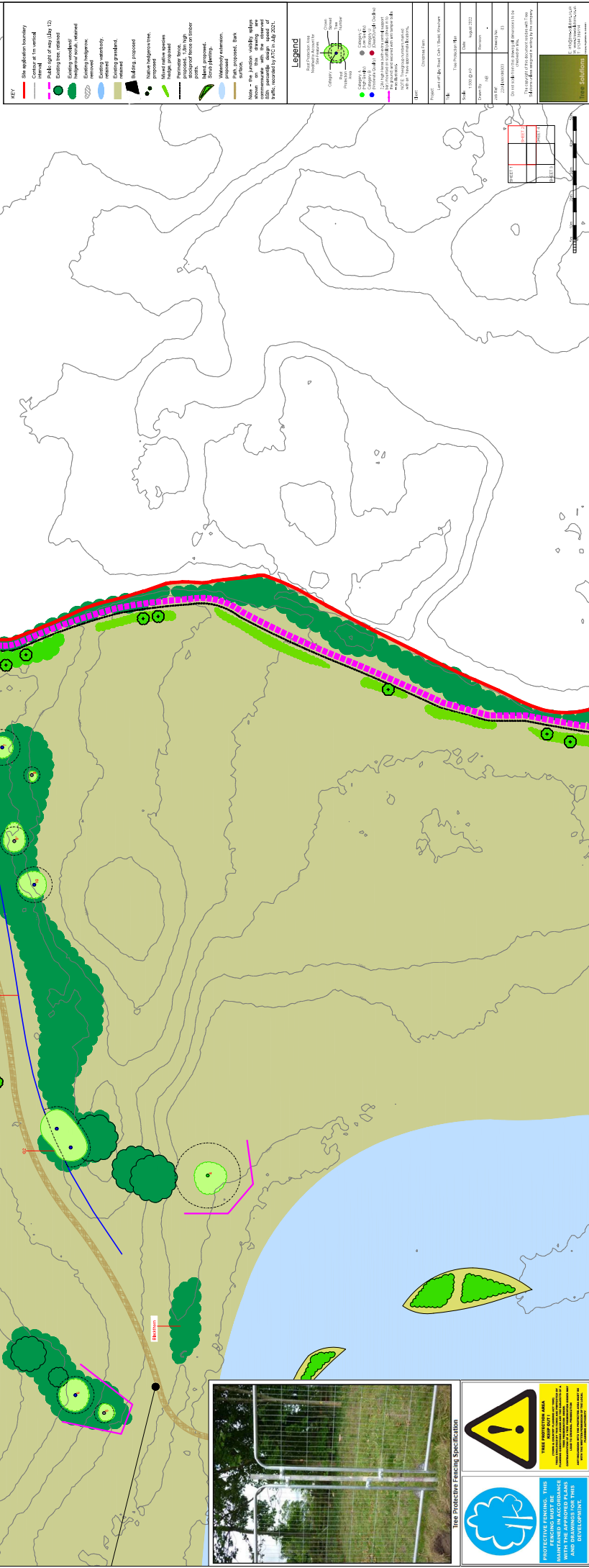
A photograph of a metal fence with a chain-link mesh, set against a background of green grass and trees. The fence is made of silver-colored metal posts and rails, with a chain-link mesh attached. The background shows a grassy field and some trees.





148m right hand
junction visibility splay.

B5102 Llay Road





PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

Sheet 1	Sheet 2	Sheet 3
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Client	Crestline Farm		
Project	Land on the Road, Cash / Road, Wharfedale		
Task	Task: Production Plan		
Start	1300 @ 40	Date	August 2022
Drawn By	HB	Revision	
Job Ref	2024-0000003	Created by	03
On not for printing (drawn on 03/08/2022) to be checked on 03/08/2022			
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Appendix Four

Tree Protective Measures/Method Statement

SEQUENCE OF OPERATIONS

From commencement of the above development, the following methodology shall be implemented in the manner and sequence described:

1. Erect temporary protective fencing
2. Main engineering/construction phase
3. Removal of temporary fencing
4. Landscaping within RPA's

1. Erect Temporary Tree Protective Fencing

1. Prior to commencement of any construction, preparation, excavation, or material deliveries the main contractor shall erect the temporary protective fencing as detailed in the 'Tree Protection Specification' and in the location indicated on the Tree Protection Plan.

2. Main Engineering/Construction Phase

1. Tree protective fencing to be erected prior to any construction plant or materials entering the site
2. Tree protective barriers in accordance with BS 5837: 2012 will be erected to prevent damage to the tree stems and any movement of plant with the RPA
3. There shall be no storage of construction material, site parking, site accommodation or equipment in any area designated as the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing
4. No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10 metres of the trunk of a tree that is to be retained. No fires will be lit
5. The site agent shall supervise deliveries by self-loading crane, with vehicles positioned in such a manner that retained trees are not at risk of damage

Cement Mixing

- The cement mixer will be laid on top of plywood boards in a position outside the RPA of any trees. The mixer will be kept in this position throughout all development work.

Avoiding Damage to Stems and Branches

- Care shall be taken when planning site operations in proximity to trees to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious injury resulting in safe retention impossible

On Site Storage of Spoil and Building Materials

- Prior to and during all site construction works no spoil will be stored and no cement mixing will take place within the Root Protection Area of any tree on or adjacent to the site even if proposed site work is to be within the crown spread. Any encroachment within this protected area will only be with the prior agreement of the LPA Arboricultural Officer

3. Remove all Temporary Tree Protective Fencing

1. Tree Protective fencing will only be removed upon completion of all construction and subsequent demolition work and once all machinery associated with the works has left site.

4. Landscaping within RPA of Trees

1. There shall be **no rotovating** of ground within any area designated as a Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing.
2. No hard-landscaping works or excavation for cables or any other service should be installed within the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) without the written consent of the LPA

TREE PROTECTIVE FENCING

- 1 Before the commencement of any demolition and subsequent construction works on site (other than those set out in the schedule of tree works contained in this document), protective fencing will be erected as detailed on the Tree Protection Plan and as specified below. The LPA Tree Officer will be given 5 days' notice upon completion of the fencing in order to inspect and approve prior to the commencement of any site works.
- 2 The fencing will consist of a scaffold framework in accordance with Figure 2 of BS 5837 – 2012 (illustration below) comprising a metal framework, both vertical and horizontal, well braced to resist impacts. Vertical tubes will be spaced at a maximum interval of 3m. Onto this, weldmesh panels shall be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not considered resistant to impact and for this reason will not be used. The site manager or other suitably qualified appointed person will be responsible for inspecting the protective fencing daily; any damage to the fencing or breaches of the fenced area will be rectified immediately.
- 3 Clearly legible weatherproof signage, stating "Protected Trees – Exclusion Zone" shall be attached to the fencing 1.5m from the ground, facing out of the Tree Protection Zone located at regular intervals along the fence line
- 4 The fencing will remain in place until completion of all site works and then only removed when all site traffic is removed from site
- 5 Other than works detailed within this method statement or approved in writing by the Local Planning Authority (LPA), no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

Protective Fencing Detail

The fence types are shown on the Tree Protection Plan with the following colour key: -

1. **Magenta**

2.0M high heavy-duty Heras panels (with extra central support bar) mounted on scaffold poles (driven into the ground) and secured with anti-tamper bolts – as illustrated below.



Tree Protective Fencing Specification

Arboricultural Consultant

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