Salopian Consultancy

Arboricultural Appraisal

(Incorporating an Arboricultural Impact Assessment and Tree Protection Measures in accordance with BS5837:2012: *trees in relation to design, demolition and construction – Recommendations*)

Project: Hamilton Solar Farm

Prepared by: D. Williams MArborA, MRSB, MSc, BSc, RFS Cert, AA PTI

On Behalf of: REPD

Foreword

Salopian Consultancy Ltd is an Arboricultural/Ecological consultancy which provides inputs to guide developers and architects during the planning process.

Core services include BS5837:2012 tree surveys, condition assessments, mortgage applications and woodland management. In addition, Salopian Consultancy Ltd have in house ecological expertise enabling them to perform a range of Phase 1 and Phase 2 ecological surveys.

Report revision record

	Draft	**Final version**
Report reference	P1078_v2	
Project	Hamilton Solar Farm	
Author	D. Williams	
Issue date	17/04/2025	11/11/2025

Contents

Executive summary

Brief of the study and context of development

This report has been prepared to identify the key arboricultural constraints to inform a planning application for a solar facility. The aim of the study has been to highlight those arboricultural constraints so that significant impacts upon trees are avoided or minimised as far as possible.

Survey methods

A tree survey was undertaken in accordance with the methodology set out in **BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.** This information has been presented to the design team to act as a tool to ensure consideration has been given to those trees on and immediately off site during the design process.

An Arboricultural Impact Assessment (AIA) has been performed to provide an informed account on how foreseeable direct and indirect impacts associated with development may impact upon the tree stock. Following completion of the AIA, tree protection measures have been prescribed to demonstrate how those trees proposed for retention can be protected during development.

Findings and recommendations

The AIA identified that the removal of approximately 12mof **14H** will be required to achieve the proposed internal access road. No conflict have been identified with shade cast by trees.

All other trees and hedgerows can be protected during construction by means of protective barrier fencing to maintain a Construction Exclusion Zone (CEZ), that respects the RPA of each tree proposed for retention. The proposed line of /security fencing once installed will be capable of acting as protective barrier fencing nearly all instances. Such protection measures could be secured by a suitably worded planning condition.

Section 1: Tree Survey

Introduction

1.1 This report, it`s plans and associated appendices have been prepared on behalf of REPD `the client', to meet the requirements of **BS5837:2012 Trees in relation to design, demolition and construction - Recommendations**, at Hamilton Solar Farm, hereafter referred to as 'the site'.

1.2 The tree survey was performed on the 1st of March 2025 by Douglas Williams, Salopian Consultancy Ltd`s Principal Arboriculturist. Doug has over 15 years' experience working within the Arboricultural industry and is a professional member of the Arboricultural Association. He holds a MSc in Biological Recording, a BSc (Hons) in Biological Sciences, L4 Diploma in Arboriculture, the LANTRA Professional Tree Inspection Certificate and undertakes regular annual CPD with a range of recognised training providers.

1.3 The tree survey has been undertaken in accordance with the methodology set out in **Section 4.4** of **BS5837:2012** which is summarised in **Appendix 1**.

1.4 The data obtained from this survey is presented within the Tree Schedule and depicted in the Tree Constraints Plan (**Plan 1**) towards the end of the report. The position of those trees surveyed are derived from topographical data included in **Appendix 2**. Each item surveyed has been allocated a sequential identification number which correlates with the Tree Schedule.

1.5 **Plan 1** depicts the theoretical rooting system of each tree using a yellow circle or polygon. The crown spreads of trees are colour coded in accordance with **Table 1 Cascade Chart for Tree Quality Assessment** described in **BS5837:2012.** The purpose of this has been to provide a hierarchy system for tree retention during decision making based on their condition and contribution to the amenity of the local area. The crown spreads of high-grade trees illustrated in green, moderate quality trees shown in blue and low-grade trees in grey. Those trees which have a limited life expectancy due to either a compromised structure or poor physiological condition are shown with red canopy spreads and referred to as 'U grade' trees.

1.6 The theoretical RPA for each tree has been calculated using formulas provided in **Section 4.6** of **BS5837:2012.** Both **Plan 1** and **Plan 2** acknowledge that pre-existing site conditions may prevent tree roots distributing asymmetrically. In such instances RPAs may be modified but not reduced based on arboricultural reasoning.

1.7 The findings of the tree survey have been used to highlight initial design implications with the aim of guiding the design process to encourage a harmonious relationship between trees and development.

Scope of the study

1.8 The primary focus of the study is to inform the planning process by;

- Meeting the validation requirements of Epping Forest District Council by presenting the findings of a tree survey undertaken in accordance with **BS5837:2012.**
- Present those arboricultural constraints in a clear and concise manner to aid the design process.
- Perform an assessment of those likely impacts associated with proposed site layout DRG.**2115_02 R 07**
- Detail appropriate tree protection measures and working methodologies to safeguard trees proposed for retention during construction.

Limitations

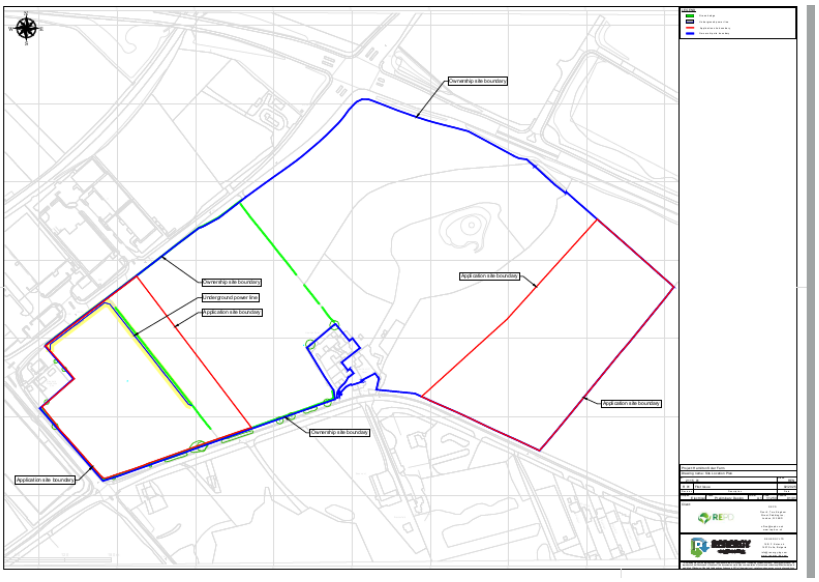
1.9 This report does not;

- Provide an assessment of the likelihood of subsidence caused by the interactions between water availability, soils and tree roots, at present or in future years. Foundation design should be undertaken in accordance with the guidance available in **National House Building Council (NHBC) publication Building near trees, Chapter 4.2** following a soil assessment by competent personnel.
- Carry out a detailed structural assessment of each tree surveyed. The absence of recommended tree work in **Schedule 1** does not imply that a tree is safe. Trees are dynamic structures and even those trees in good condition can fail or enter decline under extraordinary physical stress or following infection by pests and disease.
- The accuracy of the findings of this report are reliant on the information presented in the topographical survey and the proposed site layout. Checks of the accuracy of third-party information have not been undertaken.

Site location and context of development

1.10 The site comprises of two large arable fields of pasture, located to the north of Caudlwell Road. An initial assessment of the proposal identified that planning permission is sought for a solar facility including means of internal access and associated infrastructure.

Figure 1 Site location plan provided by REDP



Overview of the tree stock

1.11 The tree stock largely comprises of linear trees group and hedgerows which denote boundaries of the field compartments. The linear groups contain occasional large deciduous standards of ash sycamore and Norway maple, amongst other broadleaved species which are of notable size and stature. Such trees have been recorded separately to provide an informed account on their constraints to the development of the site.

Statutory legislation & planning policy

1.12 Necessary checks prior to all tree works must be undertaken by the appointed tree work contractors to ensure statutory laws are not contravened. In addition to individual protection by virtue of TPOs or Conservation Areas (CA) consideration should also be given to restrictions to tree removal imposed by the Forestry Act (1967) and the potential to support protected species (notably nesting birds and roosting bats) governed by the Wildlife and Countryside Act (1981) and EU Habitats directive, detailed further in **Appendix 3.**

1.13 Trees have many social, ecological and cultural benefits and are recognised for their economic value through the ecosystem services they provide. Such services include, but are not limited to; shade provision, pollution absorption/interception[1], carbon sequestration/storage and stormwater attenuation reducing the risk of flooding and soil erosion[2] . In addition, numerous

[1]Nowak *et al*. (2006) Air pollution Removal by Urban Trees and Shrubs in the United States. *Urban Forestry and Urban Greening* 4, p115-123

[2] http://www.woodlandtrust.org.uk/en/moretrees-moregood/Documents/Trees-flooding.pdf

studies[3] have shown that the presence of mature trees provides significant physiological and psychological benefits. The demand for properties set within neighbourhoods with mature trees is also reflected by higher average house prices, as is the investment in areas with established green infrastructure "environmental attractiveness[4] [5].

1.14 The importance of trees are recognised in various European and UK legislation such as; EU Habitats directive, National Planning Policy Framework (2024) and the Town and Country Planning Act (1990). These policies refer to trees in respect to conserving and enhancing the natural environment and indirectly in relation to issues such as climate change, biodiversity and biosecurity. (see para 151, 182, 187, 192 of NPPF)

1.15 Para 193 c) of the NPPF states that local authorities should reject any application where "*development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists*"

1.16 Natural England[6] and the Forestry Commission standing advice is that a minimum buffer of 15m should be kept from ancient woodland to avoid impacts upon ancient woodland. There may be instances where this buffer is increased to negate impact associated with air pollution and other non-direct impacts. Individual Ancient or veteran trees require a buffer area of 15 times the tree`s diameter or 5m greater than the edge of the tree`s canopy, whichever is greater.

[3] R.S.Ulrich Health Benefits of Gardens in Hospitals Chalmers University of Technology
[4] CABE (2005) Does money grow on trees?
http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/does-money-grow-on-trees.pdf
[5] Gripaios et al. (1997) The Role of Inward Investment in Urban Economic Development: The Cases of Bristol, Cardiff and Plymouth
[6] https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences

Section 2: Arboriculture Impact Assessment

Summary of impacts

2.1 The Arboricultural Impact Assessment (AIA) is a desk-based study which has been undertaken by superimposing the final site layout (**Appendix 4**) onto **Plan 1** to produce **Plan 2** which illustrates the foreseeable impacts associated with development.

2.2 Development has the potential to cause a number of direct and indirect impacts upon trees that can be detrimental to their health. This section highlights those impacts that the construction process is likely to have upon the tree stock and gives consideration to the likely conflicts that the built form may have with those retained trees in future years.

2.3 **Plan 2** depicts those trees which are to be retained with their sequential numbering, full RPAs and crown spreads intact.

2.4 Impacts associated with construction activities can in most cases be reduced or completely mitigated for in the first instance through the installation of protective barrier fencing to maintain a stand-off area from trees. This stand-off area is referred to as the CEZ. Where activities within the RPAs of retained trees are necessary, specialised construction methods and working practices will be required to mitigate impacts to an acceptable level as detailed in **Section 3.**

2.5 **Plan 3** depicts the shade arc of those individual trees and tree groups surveyed providing an indication of how the presence of trees may influence the efficiency of the solar panels and thus potential pressures to prune.

Table 1 Summary of tree removal/impacts

Impacts	A Grade Items	B Grade Items	U/C Grade Items
Tree removal to aid construction of highway access points	N/A	12m of 14H	N/A
Breach/erosion of hedgerows and tree groups	N/A	N/A	N/A
Hedgerow pruning to provide clearance from solar panels	N/A	N/A	N/A
Activities within RPAs			
Installation of security fencing	N/A	N/A	N/A
Installation of solar panels	N/A	N/A	N/A
Construction of internal access route – (Major RPA infringement)	N/A	N/A	N/A
Construction of highway and internal access route - (Minor RPA infringement)	N/A	N/A	N/A
Non direct impacts			
Temporary RPA set back, use of ground protection measures	N/A	N/A	N/A
Conflicts with shading and solar panels	N/A	N/A	N/A

Tree and hedgerow removal

2.6 Review of the proposed site layout identified the need to remove 12m of **14H** a B grade hedgerow to achieve the proposed internal access arrangements.

Partial removal of tree groups & hedgerows

2.7 The breach/erosion of hedgerows is not anticipated to implement the proposal.

Pruning

2.8 The pruning of canopies of retained trees is not envisaged as part of the proposal however where required should be undertaken in accordance with **BS3998:2010 Tree work. Recommendations** and in line with those statutory controls and permissions outlined in **Appendix 3** by suitably trained and insured Arborists. Key requirements of the standard include target pruning back to sufficient growth points and minimising the size/number of pruning cuts to achieve the desired clearance.

Activities within RPAs

2.9 A review of the proposed site layout has not identified the need to undertake works within the RPAs of retained trees. Sufficient space has been accommodated within the design to incorporate the RPAs of all items surveyed by providing a construction exclusion zone.

Temporary RPA set back

2.10 A review of the proposed site layout has not identified the need to access RPAs to facilitate construction activities.

Shading and future growth of trees

2.11 The position of solar arrays falls outside of the shade arc of those trees surveyed.

Utilities

2.12 It is anticipated that underground and overhead services can be located outside the RPA and canopies of retained trees. Where unavoidable, allowances are made for the use of hand dig methodologies or trenchless insertion methods so that roots can be retained, and desiccation avoided as permitted in **Section 7.1** and **7.7** of **BS5837:2012**

Storage of materials

2.13 Space for the storage of materials and vehicles during site preparation and construction is plentiful within the site. It is envisaged however that the delivery of materials and removal of arisings, will be managed via a phased programme particularly for ground works to make best use of the space available.

New tree planting

2.14 A key consideration of any future tree planting scheme will be the planting of species in areas where they can achieve their full potential and expected stature without outgrowing their environment. Planting trees in close proximity to structures and existing trees or in high

densities often results in tall etiolated standards or stunted growth forms, both of which should be avoided.

2.15 New Tree and hedgerow planting should meet the requirements of **BS8545: 2014 Trees: from nursery to independence in the landscape. Recommendations** with specific reference to the procurement of new trees, species selection, aftercare and maintenance. This could be achieved via planning condition through a formal Tree Planting Scheme.

Section 3: Arboricultural Method Statement

Schedule of development

3.1 The AMS details specific solutions to those impacts raised in **Section 2** in order to mitigate/reduce potential impacts upon those trees proposed for retention. An outline program of management and an auditable process has been prepared to demonstrate that those tree protection measures proposed are capable of providing sufficient protection for trees pre, during and post development.

3.2 Such a program of activities is advised under the guidance of an experienced Arboricultural Clerk of Works (ACW) to ensure that the content of this method statement is understood and implemented effectively.

3.3 Direct supervision by the ACW is advised at pre-determined phases to assist with the development process and ensure correct implementation of tree-protection measures as illustrated within **Plan 2**. A copy of this report plans and appendices will be available on site throughout the duration of construction.

Stage 1: Pre-commencement meeting

3.4 An appropriately experienced ACW will be appointed at the cost of the developer to ensure tree-protection measures are understood and enforced which could be secured using a suitably-worded planning condition. Monthly site meetings will be scheduled to identify any issues associated between trees and construction before conflicts occur. A pre-commencement meeting will be held before the commencement of works, normally attended by the ACW, the site manager and a Local Planning Authority (LPA) representative.

3.5 The sequence of construction and implementation of tree-protection measures will be discussed further to identify any changes or difficulties that may arise. The extent of the CEZ/Protective Barrier Fencing will be double checked during this meeting and an inspection regime will be agreed upon by all parties and the timing of protection/mitigation measures will follow the time table below.

Table 1: Implementation and timings of tree protection/mitigation measures

Actions	**Timing**					
Site meeting with appointed ACW						
Removal of sections of 12m section of 14H						
Installation of security fencing, to act as protective barrier fencing to enclose RPAs, and erection of temporary protective barrier fencing where security fencing doesn't fully enclose RPAs						
Monthly check to ensure tree protection measures are upheld						
Ground works and construction phase						
Removal of protective barrier fencing						
Post development tree survey						

Stage 2: Pre commencement tree works and Installation of tree protection measures

3.6 The removal the northern section of **14H** as depicted within **Plan 2** with a red infilled canopies will be completed prior to any construction works as will the installation of tree protection measures e.g. protective barrier fencing and ground protection measures.

3.7 The appointed tree contractor must hold adequate public liability, product liability and employer's liability insurances, with the relevant qualifications for the tasks at hand. All tree work operations will be undertaken in accordance with BS3998: 2010 Tree works. Recommendations. All necessary checks prior to all tree works must be undertaken by the appointed tree work contractors to ensure statutory laws are not contravened which includes the potential for trees to support protected species (notably nesting birds and roosting bats) governed by the Wildlife and Countryside Act (1981) and EU Habitats directive, detailed further in Appendix 3.

3.8 **Tree Protection** - Construction activities have the potential to cause long-term detriment to trees. It is therefore essential that appropriate tree-protection measures are installed and maintained throughout the duration of construction to prevent avoidable impacts upon trees. The position of these measures will be confirmed by an appointed ACW prior to the implementation of construction activities.

3.9 The majority of a trees rooting system is located within the upper 50cm of the soil horizon. This layer provides the optimal level of organic material, water, enabling tree roots to respire, grow, repair and drive photosynthesis. Compaction or disturbance of this layer can have a serious effect on a trees ability to perform these functions. Root severance must be avoided at all costs to prevent undermining a tree's stability in addition to causing physiological stress.

3.10 To ensure adequate protection is afforded to the root system, stem and canopy of retained trees, the extent of the RPA will be enclosed using a protective barrier fencing as illustrated in **Appendix 4**. **Plan 2** depicts the position of protective barrier fencing as a solid pink line and should be checked against the RPA measurements provided in the Tree Schedule. Once installed the ACW will inform the LPA that protective barrier fencing is in place and fit for purpose to allow works to commence.

3.11 In nearly all instances the proposed security fencing will be sufficient to replace the use of temporary hears fencing where it fully encloses RPAs, thereafter, acting as the protective barrier fencing throughout the remainder of the development.

3.12 The area within the line of protective barrier fencing is referred to as the CEZ, illustrated as an Transparent grey area in **Plan 2.** This area will be treated as sacrosanct and will not be entered during construction. Once installed, protective barrier fencing must not be removed or altered without the prior approval of the ACW and LPA.

3.13 Access to the site will be restricted to the existing vehicular field access points available for each field compartment. Parking of vehicles, plant and storage of materials will be located within a designated compound, 2m from the RPA of any tree.

3.14 Lighting of fires or mixing of materials will not be permitted within 2m of the CEZ. No mixing of materials will take place uphill from the CEZ to prevent leakage into these areas. In the event of spillage, all works will halt and the ACW will be contacted for advice. All plant and machinery will be fitted with spill kits and water will be available to flush spilt material to avoid contamination of the rooting environments.

3.15 Biosecurity control measures shall be implemented to avoid transportation of pest or disease to and from the site in line the **Arboricultural Associations Guidance Note 2 Application for Biosecurity**. This broadly involves cleaning machinery, uniform, PPE and vehicles using a disinfectant to minimise transportation of soil, water and plant materials from the works site.

3.16 Cases of ill health in trees must be brought to the attention of the ACW. The presence of a pest or disease will then be reported using the Forestry Commission Tree Pest and Pathogen sighting reporter (Tree Alert) https://treealert.forestry.gov.uk.

Stage 3 Works to be performed under supervision by ACW.

3.17 Works within the RPAs of retained trees are not deemed necessary. Where the need for unforeseeable construction activities are unavoidable within the RPA of retained trees, direct supervision by the appointed ACW is required. The ACW will be given a minimum of two weeks' notice prior to such works and will notify the LPA tree officer immediately.

Temporary Access Within RPAs

2.16 Access within RPAs is not foreseeable at this stage and should be avoided. If absolutely necessary movement across the RPA`s of retained tree will only be permitted where existing hard standing is present capable of acting as ground protection; or where ground protection measures can be installed as specified in **Appendix 6** to prevent the compaction of underlying soils. The use of <6 ton tracked excavators may be acceptable (provided the soil is not saturated) as this is generally low enough to avoid soil compaction, avoiding turning within the RPAs to prevent surface smearing[7].

Landscaping and other matters

3.18 In the event the installation of security fencing is required within RPA of retained trees, excavation of new fence posts and panels will be undertaken by hand, any concrete post holes will be lined with plastic to ensure no leakage into the surrounding soil of those trees to be retained and ground protection used where access is necessary within RPAs.

3.19 Any landscaping works such as grading of soil levels, application of topsoil will not be undertaken within RPAs unless specifically agreed with the ACW.

3.20 Any planting of shrubs, or seeding/laying of turf within the RPAs of retained tree will be undertaken by hand, with no machinery or vehicles permitted within these areas.

[7] Guidance Note 12 The Use of Cellular Confinement Systems Near Trees: A Guide to Good Practice Section 2.2 para 3.2

Stage 4 Monitoring of tree protection measures

3.21 The ACW will undertake predetermined site visits agreed during the pre-commencement meeting, to ensure tree protection measures remain intact and fit for purpose. In the event that conflicts arise between trees and construction activities, it is the responsibility of the site manager to contact the ACW to seek advice on alternative working methods.

Stage 5 Removal of tree-protection measures

3.22 Following completion of works, tree protection measures can be dismantled and removed from site. A post-construction tree survey undertaken by the project ACW is advised to highlight any remedial tree work required prior to occupation of the site.

Concluding statement

3.23 Provided that the tree protection measures and working methodologies detailed in the AMS are adhered to, no adverse effects upon trees proposed for retention or conflict with construction activities are envisaged. Such protection measures and provisions for new planting could be secured by a suitable-worded planning condition.

3.24 The tree survey and arboricultural appraisal is valid for two years; it is recommended that a biennial survey of the tree stock is undertaken as part of proactive management of those trees on site to help maintain a healthy and safe tree population.

3.25 In the event that the development proposals alter significantly, an updated impact assessment must be undertaken to identify the likely impacts upon the tree stock and amendments made to the AMS accordingly.

Tree Schedule

Site Hamilton Solar Farm
Client REPD
Surveyor D.Williams
Survey date 01/03/2025
Climatic conditions Overcast

			Tree Constraints Information												
Tree Reference No.	Species	Stem Diameter (mm) at 1.5m	Category Grade	Radius of RPA (m)	Area of RPA (m2)	Height (m)	Canopy Spread (m)				Life Stage	Physiological Condition	Structural Condition	Recommendations	Priority Code
							N	E	S	W					
1G	Ash, Hawthorn, and Elm	140	C1	1.7	8.9	7	1	1	1	1	Young	Fair	Tall, etiolated tree group.	N/A	N/A
2H	Hawthorn and Blackthorn	75	B2	0.9	2.5	1.25	0.3	0.3	0.25	0.25	Early mature	Good	Boundary hedgerow.	N/A	N/A
3H	Hawthorn and Blackthorn	75	B2	0.9	2.5	1.25	0.3	0.3	0.25	0.25	Early mature	Good	Boundary hedgerow.	N/A	N/A
4G	Ash	380	B1	4.6	65.3	11	6	6	6	6	Early mature	Fair	Ivy clad good bud density at present, minor deadwood within canopy, telephone wires pass through the southern section of the canopy. Contains two dead stems in the centre of the group.	Remove dead Elm	2
5G	Blackthorn and Ash	75	C1	0.9	2.5	5	1	1	1	1	Young	Fair	Dense tree group.	N/A	N/A
6T	Hawthorn	130	C1	1.6	7.6	3.5	1	1	1	1	Mature	Fair	Self-set beneath wires.	N/A	N/A
7H	Hawthorn, Blackthorn and Elder	80	B3	1.0	2.9	1	0.5	0.5	0.5	0.5	Mature	Good	Maintained by flail.	N/A	N/A
8T	Elm	160	U	1.9	11.6	6	1	2	2	1	Young	Dead	Dead stem.	Remove	2
9G	Hawthorn	120	C1	1.4	6.5	5.5	1	1	1	1	Early mature	Fair	Linear group.	N/A	N/A
10T	Hawthorn	100, 100, 100, 100, 100 #	C1	2.7	22.6	4	2	2.5	1	2	Mature	Fair	Off-site tree dimensions estimated, close proximity to fence line.	N/A	N/A

- The tree survey process has been undertaken in accordance with ***Section 4.4 of BS5837:2012 Trees in Relation to Design, Demolition and Construction Recommendations***, summarised in ***Appendix 1*** of the Arboricultural Appraisal.
- Each item surveyed has been given a sequential number with the respective suffix 'T' for trees 'G' for groups of trees, 'H' for hedgerows and 'W' for woodland which corresponds to the Tree Constraints Plan (**Plan1**) and Tree Protection Plan (**Plan 2**).
- The Root Protection Area (RPA) values have been calculated using the methodology set out in ***Section 4.6*** and ***Annexes C & D of BS5837:2012.*** Where pre-existing site conditions may indicate that the rooting system is not asymmetric, the RPAs may be modified in **Plan 1** and **Plan 2** but the area not reduced based on arboricultural reasoning. Such instances include the physical obstruction to root development or inhospitable rooting environments.
- Where trees are located outside of the client land ownership, or access is not achievable stem diameter have been estimated, highlighted using the suffix #
- Category Grading afforded to each item surveyed provides a hierarchy system for retention based on condition, amenity value and longevity in accordance with ***Table 1 Cascade Chart for Tree Quality Assessment described in BS5837:2012.*** A = High value, B = Moderate value C = low value & **U** compromised condition. Suffix 1,2 & 3 related to Arboricultural, Cultural and Ecological value respectively.
- Priority codes provide a classification of the urgency of works; Code 1 = Undertake within one month of the survey date, Code 2 = Perform within 6 months of the survey date, Code 3 = Complete works within one year.
- Where specified small diameter limbs/deadwood refer to a diameter <75mm, moderate deadwood/medium diameter limb equates to that of 75mm – 150mm and large diameter limbs/deadwood are those that exceed a diameter of 150mm

Site Hamilton Solar Farm
Client REPD
Surveyor D.Williams
Survey date 01/03/2025
Climatic conditions Overcast

Tree Constraints Information															
Tree Reference No.	Species	Stem Diameter (mm) at 1.5m	Category Grade	Radius of RPA (m)	Area of RPA (m2)	Height (m)	Canopy Spread (m)				Life Stage	Physiological Condition	Structural Condition	Recommendations	Priority Code
							N	E	S	W					
11T	Hawthorn	150, 200 #	C1	3.0	28.3	5.5	2	2	3	2	Mature	Fair	Self-set growing over fence.	N/A	N/A
12T	Sycamore	310, 160, 90 #	C1	4.3	58.7	6.5	3	2.5	3	2	Early mature	Fair	Self-set close to electrical infrastructure and fence line, of low amenity value	N/A	N/A
13H	Holly, Sycamore and Hazel	75	B2/3	0.9	2.5	1	0.3	0.3	0.25	0.25	Mature	Good	Field boundary hedgerow.	N/A	N/A
14H	Hawthorn and Blackthorn	75	B2/3	0.9	2.5	1	0.3	0.3	0.25	0.25	Mature	Good	Field boundary hedgerow.	N/A	N/A
15T	Ash	130	C1	1.6	7.6	5	2	2	1.5	1.5	Young	Fair	Hedgerow obscures lower stem, good bud density at present.	N/A	N/A
16T	Ash	100	C1	1.2	4.5	6	1	2.5	1	1	Young	Fair	Hedgerow obscures lower stem, good bud density at present.	N/A	N/A
17T	Ash	150	C1	1.8	10.2	6.5	1.5	1.5	1	1	Young	Fair	Hedgerow obscures lower stem, good bud density at present.	N/A	N/A
18T	Goat Willow	160, 280, 220 #	C1	4.7	68.9	7.5	4.5	4.5	2	3	Early mature	Fair	Multi-stemmed at 0.5m southern stem has engulfed wooden rail fence.	N/A	N/A
19T	Ash	150	C1	1.8	10.2	7	2	2	2	2	Young	Fair	Hedgerow tree, deep field ploughing has results in root damage, as with other trees along this boundary	N/A	N/A
20T	Goat Willow	250, 200, 200 #	C1	4.5	64.5	4	3	3	3	3	Early mature	Fair	Multi-stemmed form typical of species	N/A	N/A
21G	Hazel and Goat willow	130	C1	1.6	7.6	6	3	3	3	3	Semi mature	Fair	Highway verge planting.	N/A	N/A
22G	Sycamore	650 #	A1	7.8	191.2	14	5	5	5	5	Mature	Good	Off-site tree group.	N/A	N/A
23T	Silver Birch	470 #	B1	5.6	99.9	11	3.5	4	4	4	Mature	Good	Historically reduced, shed obscures lower stem	N/A	N/A

- The tree survey process has been undertaken in accordance with ***Section 4.4 of BS5837:2012 Trees in Relation to Design, Demolition and Construction Recommendations***, summarised in ***Appendix 1*** of the Arboricultural Appraisal.
- Each item surveyed has been given a sequential number with the respective suffix 'T' for trees 'G' for groups of trees, 'H' for hedgerows and 'W' for woodland which corresponds to the Tree Constraints Plan (**Plan1**) and Tree Protection Plan (**Plan 2**).
- The Root Protection Area (RPA) values have been calculated using the methodology set out in ***Section 4.6*** and ***Annexes C & D of BS5837:2012.*** Where pre-existing site conditions may indicate that the rooting system is not asymmetric, the RPAs may be modified in **Plan 1** and **Plan 2** but the area not reduced based on arboricultural reasoning. Such instances include the physical obstruction to root development or inhospitable rooting environments.
- Where trees are located outside of the client land ownership, or access is not achievable stem diameter have been estimated, highlighted using the suffix #
- Category Grading afforded to each item surveyed provides a hierarchy system for retention based on condition, amenity value and longevity in accordance with ***Table 1 Cascade Chart for Tree Quality Assessment described in BS5837:2012.*** A = High value, B = Moderate value C = low value & **U** compromised condition. Suffix 1,2 & 3 related to Arboricultural, Cultural and Ecological value respectively.
- Priority codes provide a classification of the urgency of works; Code 1 = Undertake within one month of the survey date, Code 2 = Perform within 6 months of the survey date, Code 3 = Complete works within one year.
- Where specified small diameter limbs/deadwood refer to a diameter <75mm, moderate deadwood/medium diameter limb equates to that of 75mm – 150mm and large diameter limbs/deadwood are those that exceed a diameter of 150mm

Site Hamilton Solar Farm
Client REPD
Surveyor D.Williams
Survey date 01/03/2025
Climatic conditions Overcast

Tree Reference No.	Species	Stem Diameter (mm) at 1.5m	Tree Constraints Information: Category Grade	Radius of RPA (m)	Area of RPA (m2)	Height (m)	Canopy Spread (m) N	E	S	W	Life Stage	Physiological Condition	Structural Condition	Recommendations	Priority Code
24T*	Crack Willow	620 #	B1	7.4	173.9	8	3	3	3	3	Mature	Good	Historically pollarded at 3.5m, tall new growth.	N/A	N/A
25T	Silver Birch	550 #	B1	6.6	136.9	10	5	3	3	6	Mature	Good	Single storey structure set beneath canopy.	N/A	N/A
26T*	Ash	230	C1	2.8	23.9	5	2	2	1.5	2	Semi mature	Good	Canopy development supressed by adjacent trees.	N/A	N/A
27T*	Ash	300	C1	3.6	40.7	7	1.5	1.5	2.5	2	Semi mature	Good	Stem directly adjacent to fence.	N/A	N/A
28G	Ash	270	C1	3.2	33.0	12	5	5	5	5	Semi mature	Good	Tall etiolated and congested group.	N/A	N/A
29G	Elm	80	U	1.0	2.9	6	2	2	2	2	Young	Poor	Has succumbed to Dutch elm disease.	Remove	2
30G	Ash	280	C1	3.4	35.5	13	4	4	4	4	Semi mature	Fair	Tall, etiolated group.	N/A	N/A
31T	Horse Chestnut	520	B1	6.2	122.3	9	4.5	4	4	4	Mature	Good	Bark crack on eastern side of southern primary limb at 3m, considered to be superficial	Monitor for change/occlusion of crack on southern limb within the next 12 month's	N/A
32T	Ash	510	B1	6.1	117.7	13	5	3	3	3	Mature	Good	Stem divides at 1.1m into multi-stemmed form, tight union, no internal bracing. Reaction growth is not acute.	Reduce in height by 2m to ease loading on included union given proximity to road	2
33T*	Sycamore	300	B1	3.6	40.7	8	3	3	3	3	Semi mature	Good	Minor deadwood at 4m north, tree is west of gateway entrance, existing tarmac within RPA.	N/A	N/A
34G	Ash, Sycamore and Elm	200	C1	2.4	18.1	10	2	2	2	2	Semi mature	Good	Cohesive linear tree group.	N/A	N/A

- The tree survey process has been undertaken in accordance with ***Section 4.4 of BS5837:2012 Trees in Relation to Design, Demolition and Construction Recommendations***, summarised in ***Appendix 1*** of the Arboricultural Appraisal.
- Each item surveyed has been given a sequential number with the respective suffix 'T' for trees 'G' for groups of trees, 'H' for hedgerows and 'W' for woodland which corresponds to the Tree Constraints Plan (**Plan1**) and Tree Protection Plan (**Plan 2**).
- The Root Protection Area (RPA) values have been calculated using the methodology set out in ***Section 4.6*** and ***Annexes C & D of BS5837:2012.*** Where pre-existing site conditions may indicate that the rooting system is not asymmetric, the RPAs may be modified in **Plan 1** and **Plan 2** but the area not reduced based on arboricultural reasoning. Such instances include the physical obstruction to root development or inhospitable rooting environments.
- Where trees are located outside of the client land ownership, or access is not achievable stem diameter have been estimated, highlighted using the suffix #
- Category Grading afforded to each item surveyed provides a hierarchy system for retention based on condition, amenity value and longevity in accordance with ***Table 1 Cascade Chart for Tree Quality Assessment described in BS5837:2012.*** A = High value, B = Moderate value C = low value & **U** compromised condition. Suffix 1,2 & 3 related to Arboricultural, Cultural and Ecological value respectively.
- Priority codes provide a classification of the urgency of works; Code 1 = Undertake within one month of the survey date, Code 2 = Perform within 6 months of the survey date, Code 3 = Complete works within one year.
- Where specified small diameter limbs/deadwood refer to a diameter <75mm, moderate deadwood/medium diameter limb equates to that of 75mm – 150mm and large diameter limbs/deadwood are those that exceed a diameter of 150mm

Site Hamilton Solar Farm
Client REPD
Surveyor D.Williams
Survey date 01/03/2025
Climatic conditions Overcast

Tree Constraints Information															
Tree Reference No.	Species	Stem Diameter (mm) at 1.5m	Category Grade	Radius of RPA (m)	Area of RPA (m2)	Height (m)	Canopy Spread (m)				Life Stage	Physiological Condition	Structural Condition	Recommendations	Priority Code
							N	E	S	W					
35G	Ash, Sycamore, Oak, Lime, Cherry and Norway maple	500	A2	6.0	113.1	13	5	5	5	5	Mature	Good	Cohesive tree group.	Assess for ash die back in summer when in leaf	3
36H	Hawthorn and Blackthorn	75	B2/3	0.9	2.5	1	0.3	0.3	0.25	0.25	Mature	Fair	Sparse/gaps in parts.	N/A	N/A
37H	Privet	75	B2	0.9	2.5	2	0.3	0.3	0.25	0.25	Mature	Fair	Hedgerow denoting edge of residential curtilage.	N/A	N/A
38T	Scots Pine	410, 300, 290 #	A1	7.0	154.8	8	2	5	5	6	Mature	Good	Lower stem obscured by hedge.	N/A	N/A
39H	Blackthorn, Hawthorn and Ash	75	B3	0.9	2.5	2	0.3	0.3	0.25	0.25	Mature	Good	Historically laid	N/A	N/A
40T	Sycamore	420 #	A1	5.0	79.8	7	6	5	4	5	Mature	Good	No significant defects, good potential for future growth, compaction from livestock noted	N/A	N/A
41G	Hawthorn and Holly	100	B1	1.2	4.5	4	1	1	1	1	Early mature	Fair	Part of hedgerow which has not been flaied to maintain height	N/A	N/A
42T	Sycamore	600	A1	7.2	162.9	10	7	6	6	6	Mature	Good	Rope swing on western lower primary limb no significant defects noted.	N/A	N/A
43H	Hawthorn	110	B1	1.3	5.5	5	1	1	1	0.5	Mature	Fair	Height not managed, southwestern aspect flailed hard, dense and compact	N/A	N/A
44H	Hawthorn	75	B1	0.9	2.5	1	0.3	0.3	0.25	0.25	Mature	Fair	Attempts to gap plant have not been successful, smothered with bracken.	Replant bare sections and apply mulch to supress weeds	3

- The tree survey process has been undertaken in accordance with ***Section 4.4 of BS5837:2012 Trees in Relation to Design, Demolition and Construction Recommendations***, summarised in ***Appendix 1*** of the Arboricultural Appraisal.
- Each item surveyed has been given a sequential number with the respective suffix 'T' for trees 'G' for groups of trees, 'H' for hedgerows and 'W' for woodland which corresponds to the Tree Constraints Plan (**Plan1**) and Tree Protection Plan (**Plan 2**).
- The Root Protection Area (RPA) values have been calculated using the methodology set out in ***Section 4.6*** and ***Annexes C & D of BS5837:2012.*** Where pre-existing site conditions may indicate that the rooting system is not asymmetric, the RPAs may be modified in **Plan 1** and **Plan 2** but the area not reduced based on arboricultural reasoning. Such instances include the physical obstruction to root development or inhospitable rooting environments.
- Where trees are located outside of the client land ownership, or access is not achievable stem diameter have been estimated, highlighted using the suffix #
- Category Grading afforded to each item surveyed provides a hierarchy system for retention based on condition, amenity value and longevity in accordance with ***Table 1 Cascade Chart for Tree Quality Assessment described in BS5837:2012.*** **A** = High value, **B** = Moderate value **C** = low value & **U** compromised condition. Suffix 1,2 & 3 related to Arboricultural, Cultural and Ecological value respectively.
- Priority codes provide a classification of the urgency of works; Code 1 = Undertake within one month of the survey date, Code 2 = Perform within 6 months of the survey date, Code 3 = Complete works within one year.
- Where specified small diameter limbs/deadwood refer to a diameter <75mm, moderate deadwood/medium diameter limb equates to that of 75mm – 150mm and large diameter limbs/deadwood are those that exceed a diameter of 150mm

Appendix 1: Summary of BS5837:2012 survey methodology

The methodology adopted for this survey is based on guidelines set out in **BS5837:2012 Trees in Relation to Design, Demolition and Construction Recommendations**, especially **Section 4.4**, 'Tree Survey'.

The tree survey includes all trees and other significant vegetation with a stem diameter of >75mm at 1.5m within the site, in addition to those located beyond the boundaries within a distance of 12 times their stem diameter. The position of each item is represented in **Plan 1,** are derived from the topographical data included in **Appendix 2.** Those items not recorded on the topographical survey have been annotated by hand and marked using the symbol '*'.

All trees have been visually inspected from ground level, with no climbing or further detailed investigative tests undertaken. All measurements detailed in the Tree Schedule are metric and have been recorded in accordance with **Section 4.4.2.5 of BS5837:2012** summarised below. Where access to trees has been restricted, either as a result of vegetation, ground conditions or third party land ownership, dimensions have been estimated and highlighted using symbol '#' in **Schedule 1.**

Any recommendations given regarding longer-term management have been made on the basis of optimising the life expectancy of trees, given their current situation and any effects, which may arise as the results of the development proposal.

Sequential reference number

All numbering of surveyed items is sequential with the respective prefix 'T' for trees 'G' for groups of trees, 'H' for hedgerows and 'W' for woodland.

Species

Common English names are used wherever possible for simplicity.

Stem diameter (DBH)

This is the measurement of the stem diameter in millimetres taken at 1.5m above ground level in accordance with **Annex C of BS5837:2012**.

Category Grading

Trees have been assigned 'U' or category grading 'A' to 'C' in accordance with the Cascade Chart given in **BS5837:2012** reproduced overleaf.

RPA radius & RPA Area (m^2)

Both values been calculated using the methodology set out in **Section 4.6** and **Annexes C & D of BS5837:2012.** Where pre-existing site conditions may indicate that the rooting system is not asymmetric, the RPAs may be modified in **Plans 1** and **2** but the area not reduced based on arboricultural reasoning. Such instances include the physical obstruction to root development or inhospitable rooting environments.

Height

An approximation of height in metres is provided for the highest point of each tree.

Canopy spread

This is taken at four cardinal points, to provide a representative account of the canopy spread.

Life stage

There are six classes to which trees are assigned:

Table A.1: Definition of ages classes

Age class	Description
Young	Newly planted within 0-10 years
Semi mature	A tree in the first third of its normal life expectancy for the species (significant potential for future growth).
Early mature	A tree in the second third of its normal life expectancy for the species (some potential for future growth).
Mature	A tree in the latter third of its normal life expectancy for the species (typically having reached its ultimate size).
Over mature	Beyond the normal life expectancy for the species.
Veteran	A tree that is of interest biologically, aesthetically or culturally because of its condition size and/or age.

Physiological condition

The trees physiological condition is classified as good, fair, poor or dead on the basis of leaf or bud density, taking note of signs of physiological stress.

Structural condition

Details of the trees structural condition are provided identifying structural defects and or signs of decay, pest and pathogens where present.

Management recommendations

Whilst a formal tree inspection has not been undertaken the survey process does take into consideration implications for damage or injury to persons and/or property; recording defects and assessing the structural condition of those trees surveyed. Where necessary, tree works have been proposed within the tree schedule to mitigate potential hazards as part of proactive management of the tree stock irrespective of development with the aim of optimising the life expectancy of those trees surveyed.

Tree work priority codes

Priority codes from 1 to 3 have been given for those trees requiring tree works detailed in **Table A.2** below. The definition and level of urgency have been determined based on the perceived likelihood of failure and hazards posed to potential or actual targets.

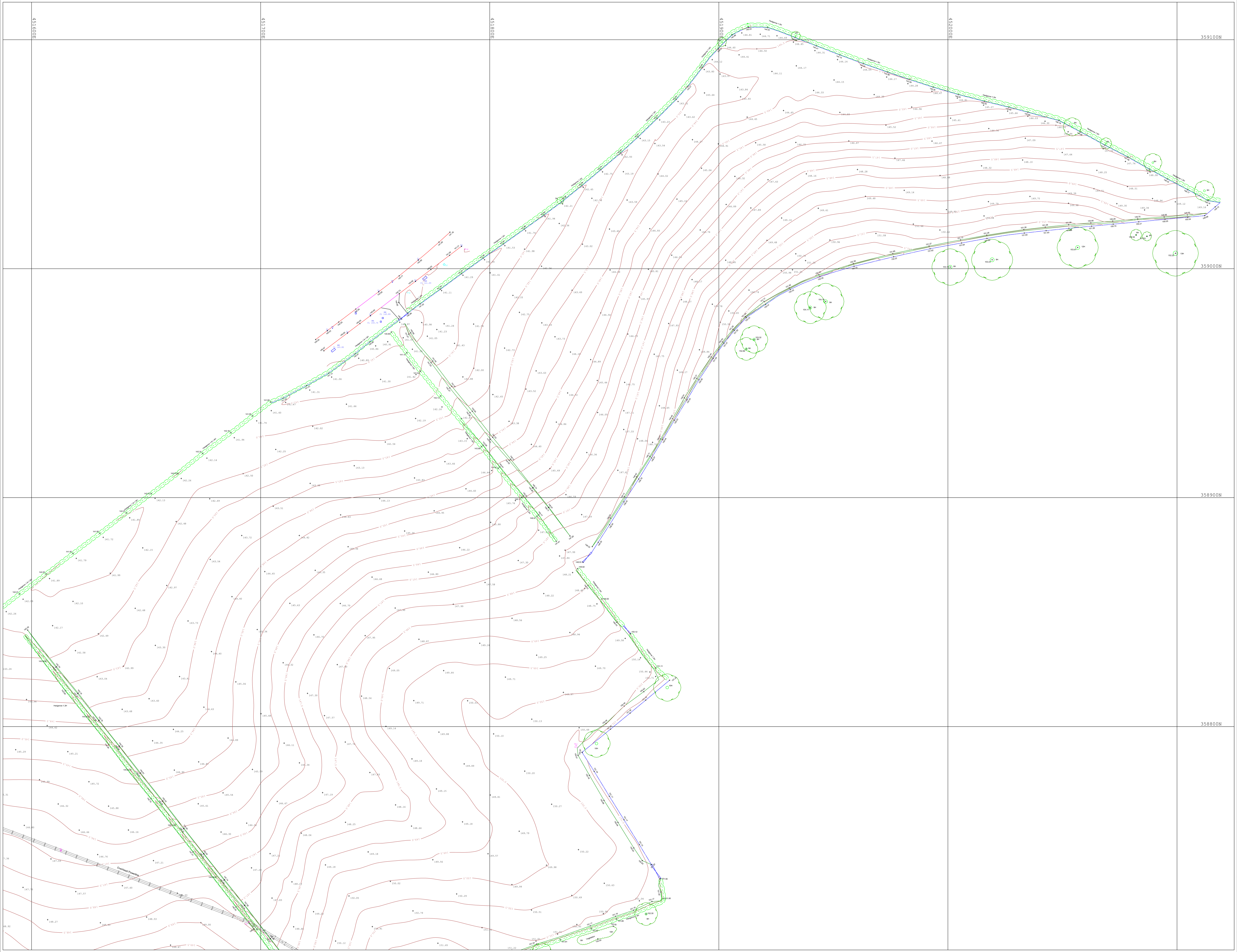
Table A.2: Tree works priority codes

Priority Code	Description
Priority Code 1	An identified hazard considered to pose an imminent or serious risk to person or property in the context of the current land use. Works must be undertaken at the earliest possible opportunity.
Priority Code 2	Works considered necessary to mitigate a perceived hazard from an observed and recorded defect. These tree works should be undertaken prior to any development works commencing on site.
Priority Code 3	Considered to be general maintenance works which should commence post development but prior to residential occupancy.

Table A.3: Summary of Cascade Chart for tree quality assessment

Category and definition	Criteria
Category U	Those trees in such a condition that they that cannot be realistically retained as a living tree in the context of the current land use for longer than 10 years. If they cannot be safely retained as an ecological receptor following proposed remedial works, these trees should be removed for arboricultural reasons followed by appropriate replacement planting.
Category A (High quality of value)	Trees with an estimated life expectancy of at least 40 years. These trees may be of particular good example of their species or contribute an important visual landscape feature or provide significant historical/conservation value.
Category B (Moderate quality and value)	Trees with an estimated life expectancy of at least 20 years. These are trees that may be included within category A, but are downgraded due to the presence of significant but remedial defect. May also include trees present in such numbers that they form a distinctive landscape feature i.e. woodland, or tree of a material conservation/cultural value.
Category C (Low quality and value)	Trees with an estimated life expectancy of at least 10 years. Generally regarded as an unremarkable specimen of its species, or of such an impaired condition that they do not qualify for higher categories providing little landscape/conservation or cultural value.

Appendix 2: Topographical survey



Comments:
The plan and digital data should only be used for its original intended purpose at the defined survey scale.

It is for the use only of the party to whom it has been addressed and no responsibility is accepted to any third party for the whole or part of its contents.

This survey has been prepared on the basis that all information and facts, which may affect the survey, have been disclosed to us by the parties concerned and no liability nor responsibility can be accepted, unless full disclosure has been made.

All ground features that were visible at the time of the survey have been located, however there may have been items obscured.

Pipe sizes and flow direction have been visually assessed from the surface and should be considered as approximate only.

All data remains the ownership of Oakes Survey Services until full payment has been received.

STATION SCHEDULE

LEGEND

Air Valve	Av
Belisha Beacon	BB
Borehole	BH
Rubbish Bin	Bin
Bollard	Boll
Bus Stop	Bs
Telecom Point	BT
Camera	Cam
Control Box	Cbox
Closed Circuit TV	Cctv
Cable TV Covers	Ctv
Down Pipe	Dp
Eaves Height	Eave
Electric Box	Ebox
Electric Post	Ep
Earth Rod	Er
Fire Hydrant	Fh
Flood light	Fl
Flag Staff	Fs
Gas Marker	Gmkr
Gate Post	Gp
Gas Valve	Gv
Gully	Gy
Illuminated Bollard	IB
Inspection Cover	IC
Inspection Cover Undefined	Icu
Floor Level	IFL
Invert Level	Inv
Letter Box	LBox
Lamp post	Lp
Manholes	MH
Marker Post	Mkr
Pipe Invert	PInv
Trial Pit	Pit
Parking Meter	PM
Posts	Post
Ridge Height	Rdge
Road Name Board	Rnb
Rodding Eye	Re
Sign Post	Sp
Stile	Stl
Tree Stump	Stmp
Stop Tap	St
Stop Valve	Sv
Cable Stay	Sy
Threshold Level	THL
Traffic Light	TL
Telegraph Post	Tp
Traffic Signal	TS
Top of Wall	TW
Unable to Lift	UTL
Valve	Va
Vent Pipe	Vp
Water Level	WL
Water Meter	Wm
Wash Out	Wo

STA1 Survey Station
Channel Line
Centre Line
Edge of Vegetation
Fence Open
Fence Panel
Fence Secure
Gate
Hedge
O/H Utilities
Top of Face

Revisions:

Ref:	Description:	Date:

OAKES SURVEYS LTD
8 The Heritage Business Centre, Derby Road, Belper, Derbyshire. DE56 1SW
Tel : 01773 820124 Fax : 01773 825407
E : info@oakessurveys.com W : www.oakessurveys.com

Client:
HAMILTON SOLAR LTD.

Location/Site:
HAMILTON SOLAR
NG17 5LB

Drawing Title:
TOPOGRAPHICAL SURVEY

Level Datum:
ORDNANCE SURVEY

Grid Datum:
ORDNANCE SURVEY

Project Number:		Drawing Reference:	
3977		HAMILTON 2D (1)	
Surveyor:	Checked:	Date:	Scale:
SRO	IR	Nov 2020	1:500@A0

Note:
Do not scale, use figured dimensions only.
Please report any discrepancies immediately to Oakes Surveys Limited.

359000N

358900N

358800N

358700N

358600N

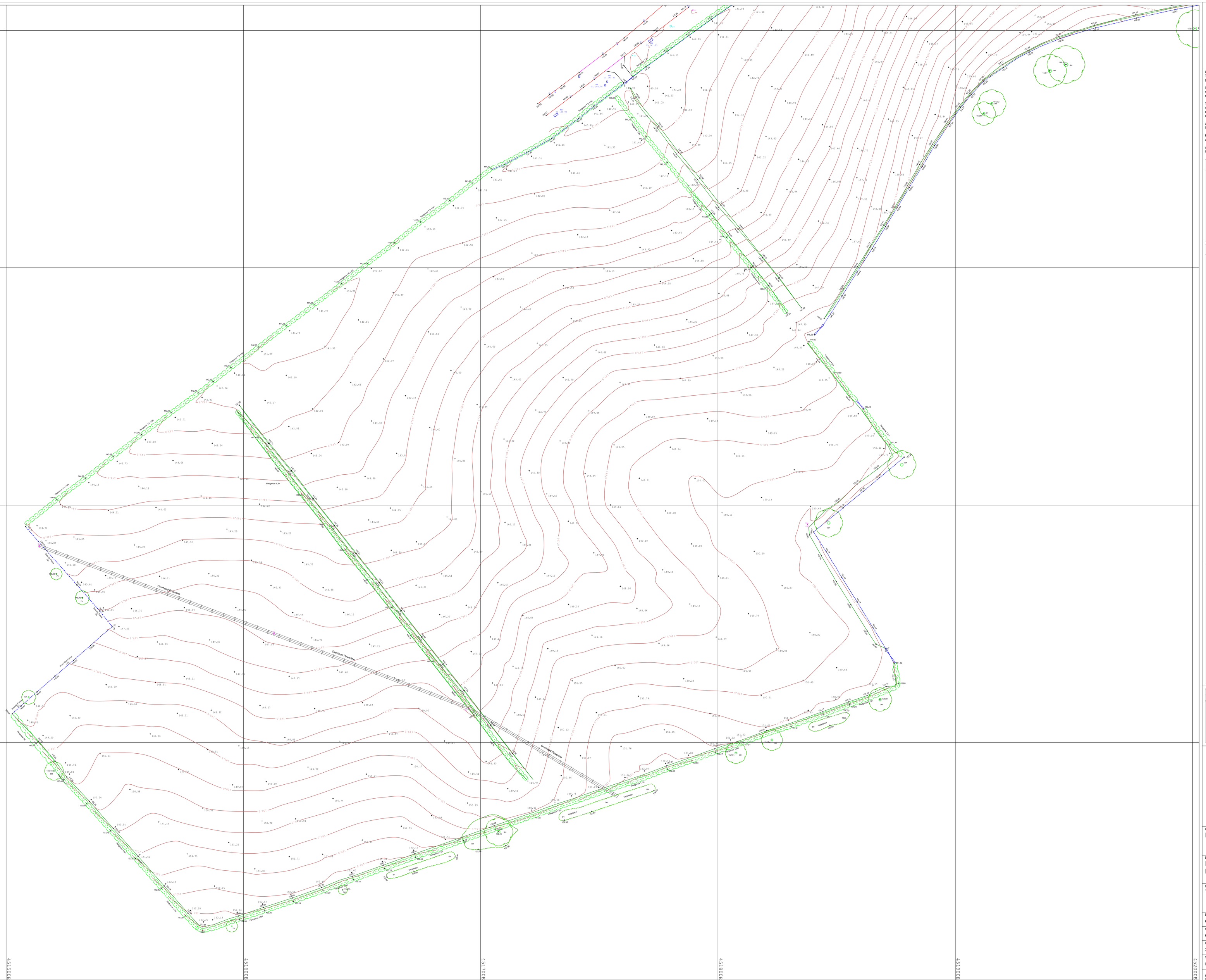
451500E

451600E

451700E

451800E

451900E



ISO 9001 REGISTERED FIRM

Comments;
The plan and digital data should only be used for its original intended purpose at the defined survey scale.

It is for the use only of the party to whom it has been addressed and no responsibility is accepted to any third party for the whole or part of its contents.

This survey has been prepared on the basis that all information and facts, which may affect the survey, have been disclosed to us by the parties concerned and no liability nor responsibility can be accepted, unless full disclosure has been made.

All ground features that were visible at the time of the survey have been located, however there may have been items obscured.

Pipe sizes and flow direction have been visually assessed from the surface and should be considered as approximate only.

All data remains the ownership of Oakes Survey Services until full payment has been received.

STATION SCHEDULE

LEGEND

Air Valve	Av
Belisha Beacon	BB
Borehole	BH
Rubbish Bin	Bin
Bollard	Boll
Bus Stop	Bs
Telecom Point	BT
Camera	Cam
Control Box	Cbox
Closed Circuit TV	Cctv
Cable TV Covers	Ctv
Down Pipe	Dp
Eaves Height	Eave
Electric Box	Ebox
Electric Post	Ep
Earth Rod	Er
Fire Hydrant	Fh
Flood light	Fl
Flag Staff	Fs
Gas Marker	Gmkr
Gate Post	Gp
Gas Valve	Gv
Gully	Gy
Illuminated Bollard	IB
Inspection Cover	IC
Inspection Cover Undefined	Icu
Floor Level	IFL
Invert Level	Inv
Letter Box	LBox
Lamp post	Lp
Manholes	MH
Marker Post	Mkr
Pipe Invert	PInv
Trial Pit	Pit
Parking Meter	PM
Posts	Post
Ridge Height	Ridge
Road Name Board	Rnb
Rodding Eye	Re
Sign Post	Sp
Stile	Stl
Tree Stump	Stmp
Stop Tap	St
Stop Valve	Sv
Cable Stay	Sy
Threshold Level	THL
Traffic Light	TL
Telegraph Post	Tp
Traffic Signal	TS
Top of Wall	TW
Unable to Lift	UTL
Valve	Va
Vent Pipe	Vp
Water Level	WL
Water Meter	Wm
Wash Out	Wo

STA1 Survey Station
Channel Line
Centre Line
Edge of Vegetation
Fence Open
Fence Panel
Fence Secure
Gate
Hedge
O/H Utilities
Top of Face

Revisions:

Ref.	Description:	Date:

OAKES SURVEYS LTD
8 The Heritage Business Centre, Derby Road, Belper, Derbyshire. DE56 1SW
Tel : 01773 820124 Fax : 01773 825407
E : info@oakessurveys.com W : www.oakessurveys.com

Client
HAMILTON SOLAR LTD.

Location/Site:
HAMILTON SOLAR
NG17 5LB

Drawing Title:
TOPOGRAPHICAL SURVEY

Level Datum:
ORDNANCE SURVEY

Grid Datum:
ORDNANCE SURVEY

Project Number:		Drawing Reference:	
3977		HAMILTON 2D (2)	
Surveyor:	Checked:	Date:	Scale:
SRO	IR	Nov 2020	1:500@A0

Note:
Do not scale, use figured dimensions only.
Please report any discrepancies immediately to Oakes Surveys Limited.

Appendix 3: Statutory Controls

Tree Preservation Orders & Conservation Area

Written consent must be obtained from the local planning (LPA) authority prior to any works upon a tree subject of a Tree Preservation Order unless the tree is;

- Dead or dangerous
- Works are in line with an obligation under an Act of Parliament
- Permission has been granted through a Planning application

A six week notice to the LPA is required under Section 211 of the Town and Country Planning Act (1990) for any tree works within a Conservation area.

It is a criminal offence to cut down, uproot, wilfully destroy or deliberately damage a tree subject of a Tree Preservation Order. Under Section 210(2) of the Town and Country Planning Act (1990) anyone found guilty of the actions above are liable of a fine of up to £20,000 if convicted by a magistrates' court. In serious cases a person may be committed for trial in the Crown Court which will also consider any financial benefits which has or is likely to result from such an offence. In addition there is also a duty requiring landowners to replace a tree removed, uprooted or destroyed in contravention of a Tree Preservation Order.

Forestry Act 1987

A felling licence is required wherever an excess of 5 cubic metres of timber is felled per calendar quarter. Exceptions to the Forestry Act (1967) include felling trees which when measured at 1.3m above ground that have a stem diameter of 8cm or below. Other exceptions include thinning of woodland trees with a stem diameter of 10cm or below and coppicing of trees with a diameter of 15cm or below.

Exceptions are also afforded to work carried out by statutory undertakers; removal of dangerous and dead trees, prevention of abatement of a nuisance and to prevent the spread of quarantined pests or disease in response to a notice served by a Forestry Commission Plant Health Officer.

Where full planning permission is authorised, both statutory obligations above are no longer applicable, transcended by the Town and Countryside Planning act (1990), which permits tree removal for the purpose of development.

The Occupiers Liability Act 1957/1984

Land owners have a duty of care to ensure they have taken practice steps to ensure those trees within the curtilage of their property are reasonably safe for permitted visitors.

Highway Act 1980

The highway authority have the ability to issue a land owner a 14 days notice to carry out works upon tree or hedgerow that overhang a highway road or footpath which the public has access to as to endanger or obstruct the passage/sight lines of vehicles or pedestrians.

Protected species

All species of British bat are listed as a European Protected Species (EPS) on Schedule 2 of The Conservation of Habitats and Species Regulation (Amended) (EU Exit) (2019) which transpose the Habitats Directive making it an offence to:

- *Deliberately capture, injure or kill a wild animal of a EPS;*
- *Deliberately disturb wild animals of a EPS wherever they are occurring, particularly any disturbance which is likely to impair their ability to survive, to breed or reproduce, or in the case of hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;*
- *Deliberately take or destroy the eggs of a wild animal of a EPS; or*
- *Damage or destroy a breeding site or resting place of a wild animal of a EPS*.

Additional protection for bats is also afforded under the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place.

All wild birds, their nests and eggs are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), this makes it an offence to:

- *Intentionally kill, injure or take any wild bird;*
- *Take, damage or destroy the nest of any wild bird while it is in use or being built;*
- *Take, damage or destroy the egg of any wild bird; or*
- *To have in one's possession, or control, any wild bird (dead or alive) or egg or any part of a wild bird or egg.*

Appendix 4: General Layout Plan

LOCATON:

Latitude	-	53.1238°
Longitude	-	-1.2292°
Altitude	-	146 m

PLOT:

Fence length	-	965 m
Fenced area	-	5.350 ha

PV PLANT SPECIFICATION:

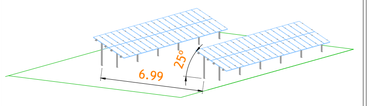
PV modules type	-	JINKO SOLAR JKM650N-78HL4-BDV-650Wp
PV module dimentions	-	2465x1134x30 mm
PV modules number	-	9 864 pcs.
PV modules per string	-	24 pcs.
Strings number	-	411 pcs.
Inverter type	-	HUAWEI SUN2000-330KTL
Inverters number	-	17 pcs.
Structure type	-	2x12 PV structures portrait - 21 pcs.
	-	2x24 PV structures portrait - 195 pcs.
Tilt	-	25°
Pitch	-	6.999 m

PV PLANT POWER:

Installed DC power	-	6 411.60 kWp (DC)
Installed AC power	-	5 100.00 kVA (AC)
DC/AC ratio	-	1.26

LEGEND

- Fence
- PV area
- Underground power line
- Green hedge
- Internal road
- Transformer station
- PV structure 2x24P @25°
- PV structure 2x12P @25°
- DNO and customer substation (11kV)
- Store room
- Access gate
- CCTV poles



Project: Hamilton Solar Farm

Drawing name: General Layout

ID:	Drawn:
2115_02	REN

Revision	Description	Date
R 07	Fence line moved away from RPA	11/2025
R 06	Access road added in red line area	10/2025
R 05	Red line area revised	10/2025
R 04	Red line area modified	06/2025
R 03	Revised red line area	05/2025
R 02	Topography and Tree Constraints Added	04/2025
R 01	First Issue	02/2025

Discipline:	Phase:	Format:	Scale:	Sheet Nr
Electrical	Preliminary Design	A1	1:750	01/01

Client:

REPD

Floor 6, Two Kingdom Street, Paddington, London, W2 6BD

office@repd.co.uk
www.repd.co.uk

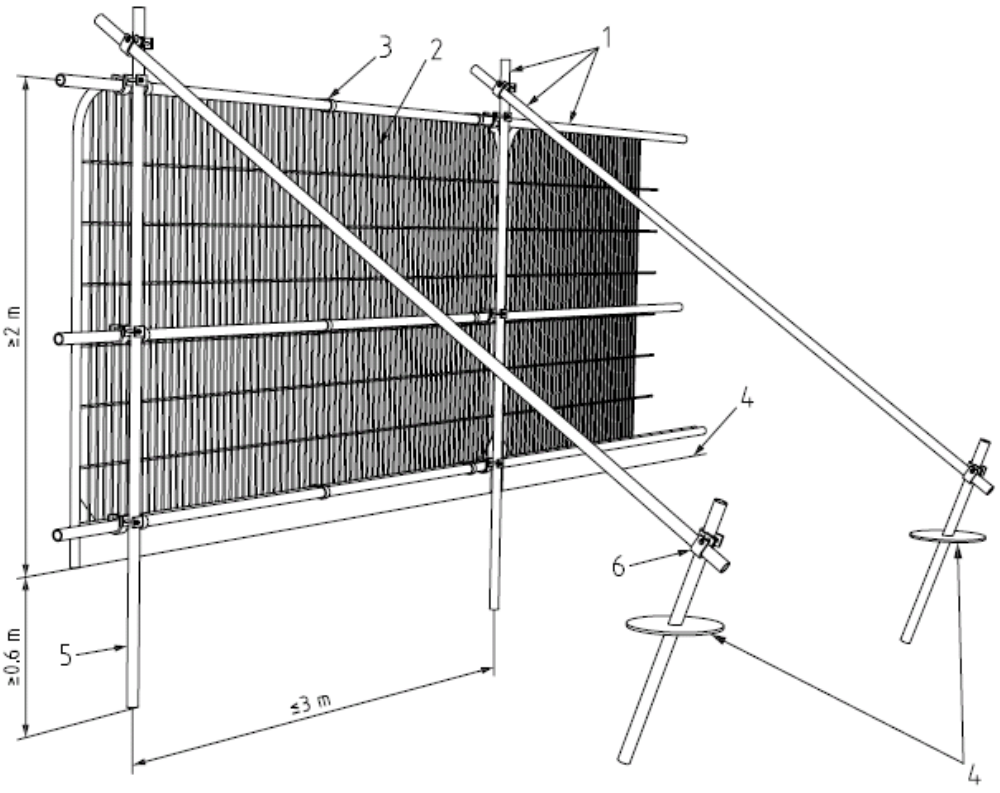
RENERGY LTD

14 B F. Kutev str.
1407 Sofia, Bulgaria

info@renergy-bg.com
www.renergy-bg.com

Appendix 5: Specification of protective barrier fencing

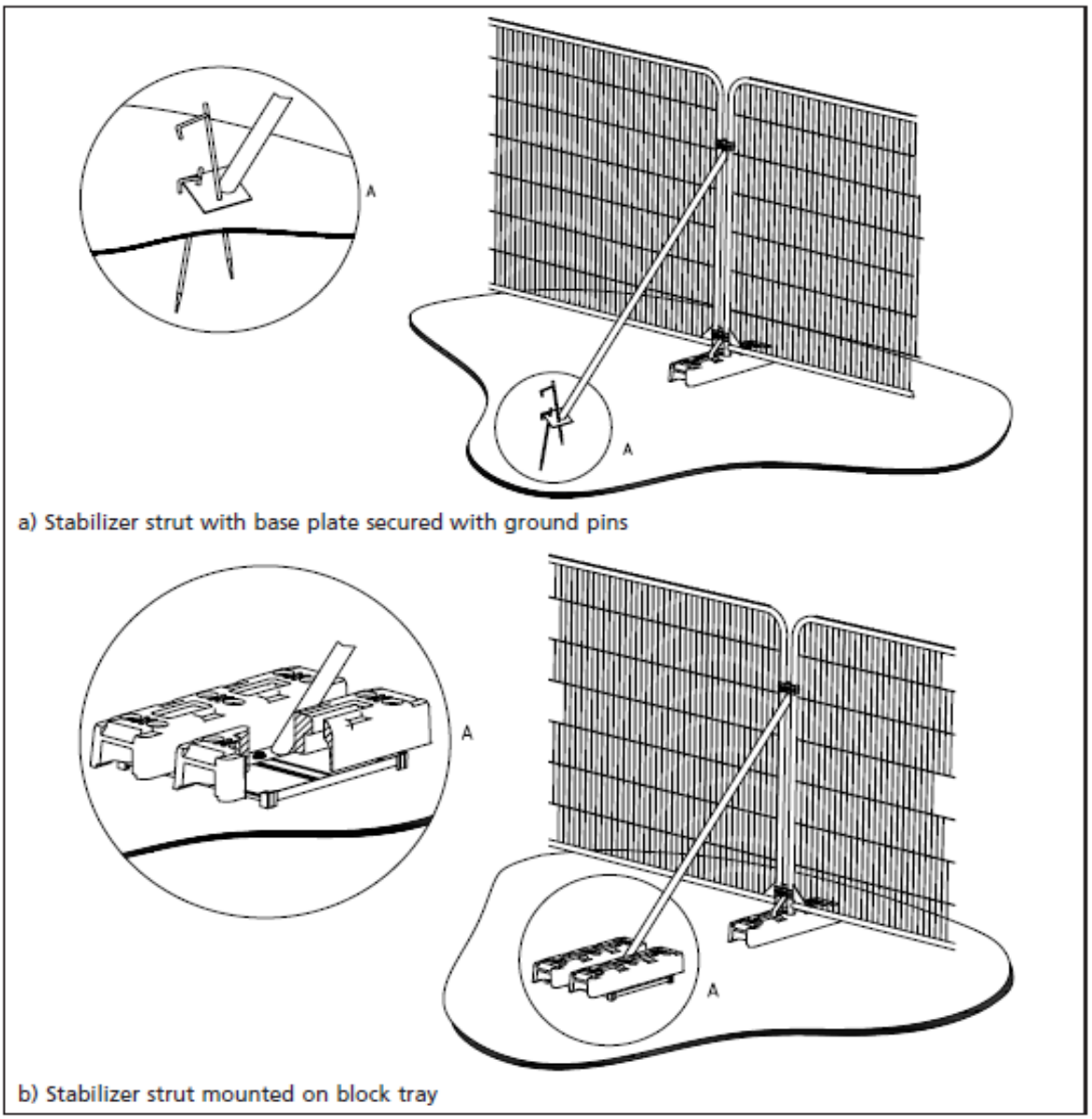
(Extract from BS 5837:2012, Figure 2)



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Alternative options available for securing protective barrier fencing (Extract from BS 5837:2012, Figure 3)



Appendix 6: Specification of ground protection measures

(Extract from BS5837:2012)

6.2.3.2 Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

6.2.3.3 New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

a) *for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*

b) *for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*

c) *for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

6.2.3.4 The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see **6.1**).

6.2.3.5 In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

Salopian Consultancy

doug@salopianconsultancy.co.uk

07939 947 631

Plan 1: Tree Constraints Plan

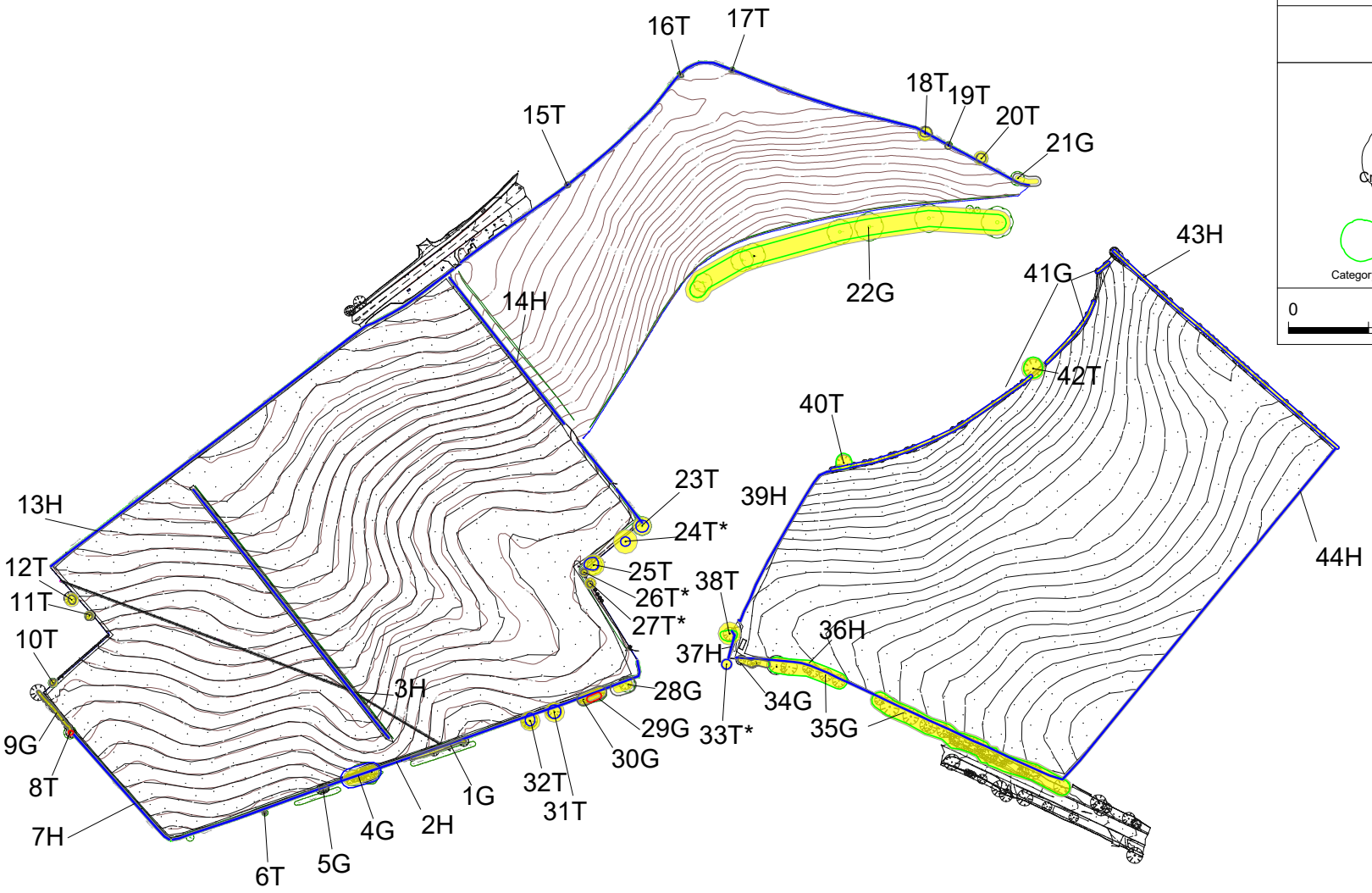
SCALE :	DATE :	N
1 : 4000 @ A4	28/03/2025	
MAP FILENAME : Hamilton Farm		

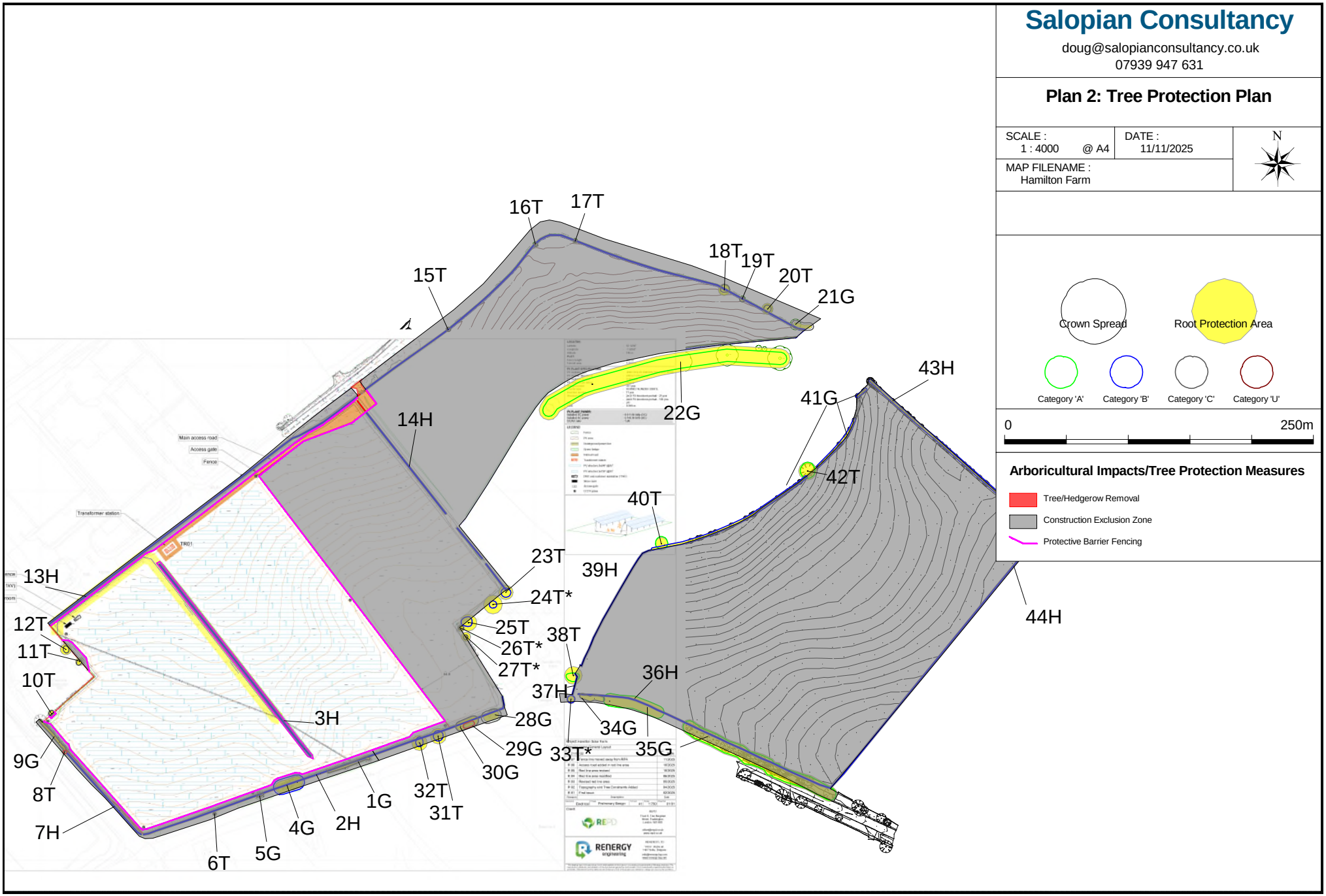
Crown Spread

Root Protection Area

Category 'A' Category 'B' Category 'C' Category 'U'

0 250m





Salopian Consultancy

doug@salopianconsultancy.co.uk
07939 947 631

Plan 2: Tree Protection Plan

SCALE :	DATE :
1 : 4000 @ A4	11/11/2025

MAP FILENAME : Hamilton Farm

N

Crown Spread

Root Protection Area

Category 'A' Category 'B' Category 'C' Category 'U'

0 250m

Arboricultural Impacts/Tree Protection Measures

- Tree/Hedgerow Removal
- Construction Exclusion Zone
- Protective Barrier Fencing

Salopian Consultancy

doug@salopianconsultancy.co.uk
07939 947 631

Plan 3: Tree Shadow Plan

SCALE :	DATE :	N
1 : 4000 @ A4	11/11/2025	
MAP FILENAME : Hamilton Farm		

0 250m

Key

Tree Shadow Arc