



Little Crow

Solar Park

Little Crow Solar Park, Scunthorpe

ENVIRONMENTAL STATEMENT: TECHNICAL APPENDICES

APPENDIX 4.8

ARBORICULTURAL IMPACT ASSESSMENT

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**ARBORICULTURAL SURVEY, IMPACT ASSESSMENT AND PROTECTION
PLAN**

ON BEHALF OF

INRG SOLAR (LITTLE CROW) LTD

FOR

SOLAR PARK DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE

AT

LITTLE CROW SOLAR PARK, SCUNTHORPE, DN20 0BG

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06.08.20	A	Submission Version	RH
19.10.20	B	Update to layout references	RH
18.11.20	C	Minor text changes	RH

1. EXECUTIVE SUMMARY

- 1.1 The proposed development is for a renewable energy scheme comprising of a large-scale solar park development on land to the east of the British Steel on the eastern edge of Scunthorpe, Lincolnshire.
- 1.2 A total of eighty-seven survey items were identified during the survey. The majority of the identified survey items were classified as tree groups and were mostly assigned to Category C (low-quality) and Category B (moderate-quality). In addition, there were also a small number of substantial, high-quality tree groups that have been assigned to Category A.
- 1.3 The proposed development will result in the removal of only six survey items as well as the partial removal of others. The majority of removals can be mitigated through new tree planting as part of a detailed landscaping scheme for the site.
- 1.4 Potential impacts to retained trees and woodland have been mitigated through design or the proposed use of temporary protection measures along with an appropriate working methodology throughout the construction period.
- 1.5 On the basis that the recommendations set out within this report are implemented and complied with it is considered that the proposed development is acceptable from an arboricultural perspective.

2. INTRODUCTION

- 2.1 Barton Hyett Associates are instructed by INRG Solar (Little Crow) Ltd, to inspect the trees that could affect or be affected by the development proposal on the land known as Little Crow, Broughton, Scunthorpe; hereafter referred to as 'the site'.
- 2.2 The development proposal is for the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak) with associated development. Due to the size of the project it is regarded as a Nationally Significant Infrastructure Project (NSIP).
- 2.3 This report, in compliance with BS5837:2012 '*Trees in relation to design, demolition and construction - recommendations*' is required to support the Environmental Statement prepared to accompany a submission to the Secretary of State for the Department of Business, Energy and Industrial Strategy in order to gain permission via a Development Consent Order.
- 2.4 The scope of the instruction was to visit the site and to survey relevant trees, hedges and woodlands in accordance with BS5837:2012 and to prepare the following information:
- Tree survey summary
 - Schedule of tree survey data
 - Tree survey plan: an updated topographical survey showing preliminary tree constraints

2.5 With reference to the above information and BS5837:2012, Barton Hyett Associates was also instructed to assess the impact of the proposed development on the site's arboricultural resource and to produce the following:

- Arboricultural impact assessment
- Tree retention and removal plan
- Tree protection plan

3. REPORT LIMITATIONS

- 3.1 The tree survey was undertaken from ground level and observations have been made solely from visual inspections for the purposes of assessment in terms relevant to planning and development. Only binoculars, mallet and a probe have been used to aid tree assessment. No invasive or non-invasive internal decay detection devices have been used in assessing tree condition.
- 3.2 The recommendations and conclusions in this report relate only to the conditions found on this site at the time of the site visit and inspection. The recommendations contained within this report are valid for a period of 12 months from the date of this report.
- 3.3 Any significant alteration to the site that may affect the trees that are present or have planning implications (level changes, additional tree works, post extreme weather events, hydrological changes) will necessitate a re-assessment of the trees and the site.
- 3.4 This report is prepared for planning purposes only and does not evaluate the degree of risk posed by trees.
- 3.5 Trees are living organisms and self-supporting dynamic structures. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. They have the potential to fail structurally, without prior manifestation of any reasonably observable symptoms. It is therefore not possible to categorically state that any tree is 'safe'.
- 3.6 It is beyond the scope of this report to comment in relation to structural damage – direct or indirect, existing or potential – that might be associated with vegetation growth, or vegetation-related soil subsidence or heave.

- 3.7 Any management recommendations set out within this report are of an advisory and preliminary nature only and relate to trees within the context of current site use. Any physical alterations to site conditions subsequent to the date of the site survey will have the potential to change/invalidate the findings and recommendations of this report.

4. DOCUMENTS AND INFORMATION PROVIDED

4.1 For the purposes of carrying out the assessment Barton Hyett has been provided with, and made reference to, the following information:

- Topographical Survey Plan – No date or reference
- Proposed site layout plan - *Works Details Whole Site Plan*
[Document Ref 2.10 LC DRW]

5. DESCRIPTION OF SITE AND TREES

5.1 The site is located on land directly to east of the British Steel works in Scunthorpe, Lincolnshire. A drawing showing the location of the site: Land Plan & Order Limits [*Document ref: 2.01 LC DRW*] can be found at APPENDIX 1 of this report.

- Post code: DN20 0BG
- Grid reference: SE 938 114 (approximate centre of site)

5.2 The site is located on the eastern edge of the town of Scunthorpe, Lincolnshire. In addition, the village of Broughton is situated approximately one mile to the east/south-east of the site.

5.3 The site is large and consists of mostly large agricultural fields which, at the time of the tree survey, were being utilised for crop production. Most of the fields are divided by either hedgerow's, linear tree groups or areas of woodland.

5.4 Access in to the site is from Ermine Street (B1207) located to the east. There are existing farm tracks from Ermine Street to the west and continue throughout the site.

5.5 The site is generally level within its eastern region but slope gently down towards the western boundary. There are some drainage ditches and a watercourse within the western region of the site. These are located on the field boundaries.

5.6 Public visibility is limited as the main British Steel works is located close by to the west and all other boundaries are flanked with mature woodland. However, there are a number of public rights of way which navigate from the south-east (from Broughton village through West Wood) towards the western boundary and then north through Santon Wood towards Dawes Lane located to the north-west of the site.

- 5.7 Within the Order Limits the vegetation is a mix of a number of managed and unmanaged hedgerows, linear tree groups and larger wooded areas. The land surrounding the site to the south, east and north contains more substantial areas of woodland.
- 5.8 The northern boundary of the site is marked by the southern edge of Santon Wood. This is located to the south of High Santon Farm which contains a number of agricultural fields, beyond which is Dawes Lane.
- 5.9 The eastern and most of the southern boundary is formed by substantial areas of woodland. These are named 'Heron Holt' and 'West Wood' to the east and 'Manby Wood' to the south. These areas of woodland form a buffer to the village of Broughton which is located to the east/south-east.
- 5.10 The western boundary is formed by the main eastern boundary fencing to the adjacent steel works. The steel works is substantial in size and occupies most land to the west until you reach industrial and residential areas on the eastern edge of Scunthorpe.

6. STATUTORY PROTECTION

Statutory tree protection

- 6.1 I have contacted North Lincolnshire Council (phone call 11.12.18), the Local Planning Authority (LPA), and they have confirmed that the site is not located within a Conservation Area and that none of the trees within site are currently protected by Tree Preservation Order (TPO).
- 6.2 Outside the Order Limits and to the north of the site, there is an area of woodland that is protected by two separate TPOs and only relates to G2 as referenced in the tree survey. The TPOs are referenced '*Tree Preservation Order (High Santon, Burnt Strip No1 and No2) 1985*' and include one area designation (A1) and three woodland designations (W1-3). The protected woodland area (G3) is remote from the development proposals.
- 6.3 There is also another woodland TPO located to the south-east of the site and, again, outside the Order Limits. This relates to a large area of woodland that is referenced as W1 within '*Tree Preservation Order (Gladbury Wood, Lundimore Wood and Rose Cottage) Order 2017*'.
- 6.4 In addition, DEFRA's on-line mapping system 'MAGIC' has confirmed that a section of G43, as referenced within the tree survey, is designated as 'Ancient Replanted Woodland'. In the context of the National Planning Policy Framework (2019), 'Ancient Replanted Woodland' carries the same weight as 'Ancient Semi Natural Woodland'.
- 6.5 All statutory designations are shown on the Tree Survey and Constraints Plan at APPENDIX 3. The following information is provided for advisory purposes.

- 6.6 Notwithstanding specific exemptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of protected trees or woodlands without the prior written consent of the LPA.
- 6.7 Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £25,000 if convicted in a Magistrates' Court, or an unlimited fine if the matter is determined by the Crown Court.
- 6.8 Similarly, and again notwithstanding specific exemptions, it is an offence to carry out any works to a tree in a Conservation Area with a trunk diameter greater than 75mm diameter at 1.5 height without having first provided the LPA with 6 weeks written notification of intent to carry out the works.
- 6.9 On many non-residential sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter without having first obtained a felling licence from the Forestry Commission.
- 6.10 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with the statutory controls outlined.

Statutory Wildlife Protection

- 6.11 Although preliminary visual checks from ground level of likely wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside of the scope for this report. For detailed matters relating to ecology the reports and findings of Clarkson & Woods Ecological Consultants should be referred to.

- 6.12 Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for protected species such as bats in addition to birds and small mammals. In some instances specialist ecological advice may be required. This may result in tree works being carried out following a detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the site manager, owner or consulting arboriculturist should be informed and appropriate action taken as recommended by the appointed Ecologist or the relevant Statutory Nature Conservation Organisation (SNCO): Natural England.
- 6.13 It is advised that tree/hedgerow works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. This time period only provides an indication of likely nesting times and as such diligence is required when undertaking tree works at all times.
- 6.14 Irrespective of the time of year, and other than any actions approved under General Licence, it is an offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destroy the nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird nesting period. However, any tree works should always only be carried out following a preliminary visual check of the vegetation.
- 6.15 For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in England and Wales.
- 6.16 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with any relevant statutory controls, outlined above.

7. ARBORICULTURAL SURVEY

Site visit

- 7.1 Barton Hyett Associates visited the site on two separate occasions in the summer of 2017. The weather at the time of the visit was dry and clear. All observations were made from ground level (aided by the Visual Tree Assessment method – Mattheck and Breloer, 1994¹) and all dimensions were measured unless otherwise stated as estimated in the survey schedules.
- 7.2 No significant difficulties were encountered when collecting the baseline data, however it was possible to access all off-site trees. In addition, full access to all areas of dense vegetation or areas of woodland was not possible, however, this did not hinder the collection of appropriate detail on the arboricultural constraints of the site.

Methodology

- 7.3 The survey was undertaken in accordance with BS5837:2012 and the methodology is set out within APPENDIX 2 of this report.
- 7.4 The tree survey findings are recorded in the tree survey schedule at APPENDIX 2 of this report.
- 7.5 Within the tree survey schedule, each surveyed tree (T), group (G) or hedgerow (H) on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan which can be found at APPENDIX 3 of this report.

¹ The Body Language of Trees: A Handbook for Failure Analysis (Research for Amenity Trees)

8. TREE SURVEY FINDINGS

8.1 A summary of the tree survey quality assessment findings that are relevant to the current proposals are shown in table form below:

	Total	A - High quality trees whose retention is most desirable.	B - Moderate quality trees whose retention is desirable.	C - Low quality trees which could be retained but should not significantly constrain the proposal.	U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	22	3	9	7	3
Groups	58	12	20	26	0
Hedgerows	7	0	1	6	0
Total	87	15	30	39	3

8.2 The table above shows that a total of eighty-seven survey items were identified during the tree survey. The majority of survey items were tree groups, which comprised a total of fifty-eight survey items. A total of twenty-two Individual trees were identified as well as seven hedgerows.

8.3 The majority of the survey items were categorised as low-quality (Category C) and included twenty-six tree groups, seven individual trees and six hedgerows. These items are likely to have a useful life expectancy of at least ten years.

8.4 An almost equal number of the moderate-quality (Category B) items were also identified and included twenty tree groups, nine individual trees and one hedgerow. These items were considered better in relation to their condition, overall size and presence within the local landscape. They are likely to have a useful life expectancy of at least twenty years.

8.5 Fifteen survey items were identified as high-quality (Category A) and included twelve tree groups and three individual trees. These trees and groups are considered very good and/or were significant within

the local landscape. Their anticipated useful life expectancy is within the region of forty years.

- 8.6 Only three survey items were identified as Category 'U' and considered unsuitable for retention in the current site context. These items had significant physiological or structural defects which has limited their useful life expectancy below ten years.
- 8.7 It should be noted that since completion of the original tree survey, 3 trees (T14, T15 and T16) have been removed. These were removed by the landowner as part of the ongoing management and operation of agricultural land.
- 8.8 Select photographs of the site are shown on the following pages:



Photoview 1: Looking west towards significant high-quality (Category A) linear group G46.



Photoview 2: Looking west from the south-west corner of the site. Moderate quality (T15) within centre frame.



Photoview 3: Looking north-west from the southern boundary of the site. High quality G49 left of centre and steel works in the distance.

9. IDENTIFICATION OF PRELIMINARY TREE CONSTRAINTS

9.1 In accordance with BS5837:2012, below ground constraints, or root protection areas (RPAs), for the surveyed trees have been plotted onto the tree survey plan for the site. These are represented as a circle centred on the base of each tree stem with a radius of 12 times stem diameter measured at 1.5m above ground level.

9.2 With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure should be treated as a priority”. “The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained”.

9.3 BS5837:2012 states (4.6.2) that, “where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced.” The BS goes on to state that, “modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,” and that any deviation from the original circular plot should take into account:

- morphology and disposition of roots
- topography and drainage
- soil type and structure
- the likely tolerance of the tree to root damage/disturbance

9.4 Given the nature of the site and the proposed development no changes to the default circular RPAs have been made.

9.5 Root systems can be damaged in a number of ways as follows:

- Severance of a root will destroy all parts of the root beyond that point. The larger the root severed, the greater the impact on the tree. If roots are damaged close to the trunk, the anchorage and stability of the tree can be affected
- The root bark protects the root from decay and is also essential for further root growth. If damage to the bark extends around the whole circumference, the root beyond that point will be killed
- Soil compaction, which may occur from storage of material or passage of heavy equipment over the root area, can restrict and even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.
- Lowering the soil level will strip out the mass of roots near the surface
- Raising soil levels will have the same effect as soil compaction
- Incorrect selection and application of herbicide
- Spillage of oils or other harmful materials

9.6 Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and protected trees.

10. DESCRIPTION OF PROPOSED DEVELOPMENT

- 10.1 The development proposal is for the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak) with associated development.
- 10.2 An alternative location of the battery energy storage system is also proposed. The alternative location is shown on the drawing titled *Works Details Whole Site Plan [Document Ref 2.10 LC DRW]* and is positioned to the north of the proposed substation compound. The alternative location may be utilised if, for example, technological advances in solar technologies allows the overall footprint of the development to be reduced.
- 10.3 The alternative location is within the existing field pattern and remote from any trees. The alternative location is therefore not considered within the following AIA.
- 10.4 Access on to the site is via an existing farm track which navigates to the west in to the site from Ermine Street (B1207) to the east.
- 10.5 The detailed proposed layout is shown on the Tree Protection Plan at APPENDIX 6.

11. ARBORICULTURAL IMPACT ASSESSMENT (AIA)

11.1 With reference to BS5837:2012 'Trees in relation to design, demolition and construction', this AIA evaluates the direct and indirect effects of the proposals on the site's arboricultural resource.

11.2 The AIA considers the effects of any tree loss required to implement the detailed design as well as any reasonably foreseeable potentially damaging activities proposed in the vicinity of retained trees. With reference to BS5837:2012 and the nature of the proposals, such activities might include:

- Tree removals to facilitate the design
- Demolition of hard surfaces in proximity to retained trees
- Soil compaction in proximity to retained trees
- Direct impact damage to trees and roots associated with construction operations

11.3 The AIA schedule (at APPENDIX 4) is an interpretation by an Arboriculturist of the detailed proposals in relation to the existing arboricultural constraints on site. The schedule provides a tree-by-tree/group-by-group assessment of the level of potential impacts of the proposals. This assessment is cross referenced against tree/group qualities in order to provide evaluations of the degree of significance of the anticipated arboricultural impacts.

11.4 The AIA schedule subsequently sets out preventative measures and other mitigation proposals to reduce, insofar as possible, the level of arboricultural impact and its corresponding significance. This 'adjusted' significance may be considered either in terms of an individual survey item, for example in the context of the use of tree protection barriers, or (where mitigation planting is concerned) in the wider context of the site's overall arboricultural resource.

Description of proposed arboricultural losses

11.5 A summary of anticipated tree losses in relation to the proposals is shown in table form below and illustrated on the tree retention and removal plan at APPENDIX 5:

Quality Category	Trees proposed for removal due to development	Total number of removals per category	Percentage of removals
A	T16	1	1.1%
B	T4,	1	1.1%
C	G13,	1	1.1%
U	T6, T18, T20	3	3.4%
Totals	6	6	7%

11.6 The table above shows that only 7% of the arboricultural resource will have to be removed to allow the development proposals to be implemented. It should be noted that all but one survey items to be removed are individual trees. The greater majority of the arboricultural resource on the site is substantial tree groups, on and around the site, all of which will be retained.

11.7 All Category 'U' trees have been recommended for removal in accordance with good arboricultural management and to mitigate any safety risk they pose if the land use changes. These recommendations are irrespective of the development proposals. An assessment of the ecological value of these trees should be made before any removal is carried out.

11.8 The development proposals will also result in the partial removal of a number of hedgerows and tree groups (e.g. H1, H2, G31, G32, G34, G36, G38, G41 and G42). The majority of these localised removals are required to allow the construction of the internal access roads and the site perimeter security fence.

Significance of proposed arboricultural losses

11.9 The tree removals that will occur as a result of the proposed development are minimal when considered in the context of the arboricultural resource that will be retained. Only one high-quality (Category A), one moderate-quality (Category B) and two low-quality (Category C) trees will have to be removed. This will have very little impact on public visual amenity and the wider canopy cover of the site.

11.10 It can be seen from the AIA schedule at APPENDIX 4 that the majority of arboricultural impacts of the proposed development are considered to be 'insignificant' (very short-term) and rising to 'minor' (short-term). There are also some 'moderate' (short to medium-term) and a small number of major (long-term) impacts. However, all these impacts are only likely to affect a small proportion of the sites arboricultural resource.

11.11 The majority of the proposed tree loss can be mitigated through additional tree planting as part of detailed landscaping proposals for the site.

Impacts on retained trees

11.12 A detailed AIA schedule is attached at APPENDIX 4 of this report but a summary of potential impacts that have been considered is provided below.

Demolition and site clearance

11.13 No existing buildings will have to be demolished to enable the development proposals to be implemented.

Facilitation pruning

11.14 The proposed layout shows that facilitation pruning may be required to enable the construction and future safe operation of the battery energy storage system. The pruning is likely to be minor in nature as it will only be required to allow clear access for construction vehicles entering the battery energy storage system area and to remove branches that will potentially be overhanging the battery energy storage system compound.

11.15 However, if during the construction phase of the project it is found that pruning is required to any of the retained trees, then advice should be obtained from the Project Arboriculturist.

Tree protection fencing

11.16 It is considered that the sites security fencing, to be erected around the periphery of the site would act as an effective tree protection barrier if erected before any construction works commence on site. This will mitigate the need to install BS5837:2012 fencing within the outer areas of the site.

11.17 However, the perimeter fencing will only protect trees located around the periphery of the site. Trees and hedgerows contained within the interior of the site could be impacted during the construction phase of the project and will have to be protected. Within these areas temporary tree protection fencing will have to be installed.

11.18 A section of the perimeter fence is shown within the RPA of moderate quality wooded group G23. To reduce potential impacts, it is considered that the position of the fence could be re-located to the north and to the edge of the existing farm track. The Project Arboriculturist will offer guidance if required.

11.19 For the interior of the site, it is considered unrealistic to install tree protection fencing to full BS5837:2012 specification due to the large amount of fencing required to protect these features. From past experience, construction activities with solar park developments are usually limited to a small area around the panels and therefore, it is proposed that the tree protection fencing is downgraded to a 'euro-mesh' type fencing which will act as a clear marker of the root protection areas of adjacent trees.

11.20 Any other trees and vegetation within the interior of the site which have a higher level of construction activity, should be protected with a BS5837:2012 specification fencing. The specification for the tree protection fencing should be agreed with the determining body.

11.21 All tree protection fencing and specification is shown on the Tree Protection Plan at APPENDIX 6.

Access

11.22 The existing farm tracks which navigates the entire site will be utilised during the construction phase of the project. These may have to be upgraded and if required this is anticipated to be with crushed stone. As these are existing tracks are in regular use, it is considered that additional impacts to adjacent trees as a result of these installation works will be minimal.

Service installation

11.23 Trenches to enable the installation of underground electrical cables will have to be excavated. As a whole these are isolated from retained trees and hedgerows. However, the proposals do show that trenches will need to be excavated through a number of survey items (e.g. H2, H3, H4, H6, T10, G25, G26, G35, G41, G46 and G57).

11.24 The works have the potential to impact the physiological and structural condition of these trees and therefore they should be undertaken in accordance with an approved Arboricultural Method Statement (AMS) and guidance from the Project Arboriculturist if required. As an alternative to vegetation removal it may be feasible to install these cable runs using trenchless techniques such as directional drilling.

Ground level changes

11.25 The existing ground level will remain, however if there is a need to alter the ground levels in any way to implement the proposals, then advice and guidance should be gained from the project Arboriculturist.

Foundations

11.26 No foundations will have to be excavated close to retained trees and hedgerows. However, if during the construction phase it is found that excavations are required to allow the installation of foundations then advice should be gained from the project Arboriculturist.

Hard surfacing

11.27 The new access road through the site will utilise the existing farm tracks in most areas and therefore impacts to adjacent trees will be insignificant.

Ancient Replanted Woodland

11.28 Through the iterative design process, changes have been made to the proposed layout to ensure that the identified 'Ancient Replanted Woodland' (G43) has an appropriate buffer to development.

11.29 The Standing Advice produced by the Forestry Commission and Natural England as included in the National Planning Policy

Framework Guidance advises that a buffer zone of at least 15 metres should be used to protect ancient woodland and to avoid root damage. It also adds that the size and type of buffer zone should vary depending on the scale, type and impact of the development.

11.30 The proposed site perimeter fence (a lightweight deer fence construction) is the closest element of the proposed development to G43. The location of the proposed site perimeter fence is, at its closest 15 metres distant from the boundary of G43. The proposed solar panels are, at their closest located 20 metres distant from the boundary of G43. It is considered that any potential direct impact to G43 (especially when considering the historic agricultural land use) has been effectively mitigated by design.

12. TREE PROTECTION PLAN (TPP)

12.1 A Tree Protection Plan is attached at APPENDIX 6 of this report.

12.2 In accordance with BS5837:2012 the TPP is superimposed onto the proposed site layout plan and based on the topographical survey.

12.3 Where practical the TPP has been drawn to ensure the square metre area of the RPA's for individual trees has been maintained and also that the RPAs cover the likely rooting area of individual trees. Any hard surfacing and structures within the RPAs of trees to be retained are highlighted on the TPP. In addition, where relevant, the TPP shows indicative locations of protective barriers (forming Construction Exclusion Zones in relation to RPAs of retained trees).

12.4 The preparation of the TPP has considered the following factors where relevant:-

- Site construction access;
- intensity and nature of construction activity;
- contractors car parking;
- phasing of construction works;
- availability of special construction techniques;
- spatial requirements for:
 - Temporary and permanent apparatus and service runs;
 - Foundation excavations and construction works;
 - Site huts, toilets (including drainage) and other temporary structures;
 - Storage (either temporary or long-term) of materials, spoil, fuel and mixing of concrete.

- All changes in ground levels including location of retaining walls, steps and adequate allowance for foundations of such walls and backfillings;

12.5 The sites perimeter security fencing should act as an effective tree protection barrier if erected before construction activities commence on site. Trees within the interior of the site will still require tree protection fencing in accordance with BS5837:2012.

12.6 It is considered unrealistic to install full BS5837:2012 specification fencing within the interior of the site due to the excessive amount required to do so. Therefore, it is proposed that tree protection fencing that is required in areas of lower construction activity is downgraded to a lower specification.

12.7 The tree protection measures shown on the Tree Protection Plan demonstrate the feasibility of the proposed development in relation to retained trees. However, they must be implemented with specific reference to a finalised tree protection plan and an arboricultural method statement that is relevant to the proposals.

13. HEADS OF TERMS - ARBORICULTURAL METHOD STATEMENT

13.1 BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following on from the approval of the feasibility of a scheme by the relevant regulatory body.

13.2 Annex B and Table B.1 of BS5837:2012, an informative, advises that arboricultural method statement heads of terms are a sufficient level of information in order to deliver tree-related information into the planning system. The table also advises that a detailed arboricultural method statement might reasonably be required as a 'reserved matter' or planning condition.

13.3 In relation to the above site, it is anticipated that arboricultural working methods are likely to be quite straightforward. A draft, 'heads of terms' is set out below:

- Project Arboriculturist – schedule of monitoring and supervision
- Pre-commencement site meeting
- Tree removals and facilitation pruning
- Erection of sites security fencing
- Erection of tree protection barriers (as per tree protection plan)
- Main construction phase
- Removal of tree protection barriers (approval of site conditions)
- Final landscaping including tree planting.

14. SUMMARY

- 14.1 This report was commissioned to support the construction, operation, maintenance and decommissioning of a ground mounted solar park and battery energy storage system with an intended design capacity of over 50MWp (megawatts peak). Due to the size of the project it is regarded as a Nationally Significant Infrastructure Project (NSIP).
- 14.2 The site is located on the eastern edge of the town of Scunthorpe and approximately one mile to the north-west of the village of Broughton, Lincolnshire.
- 14.3 The site is large and consists of mostly agricultural fields which, at the time of the tree survey were being utilised for crop production. Most fields are divided by either hedgerow's, linear tree groups or areas of woodland.
- 14.4 A total of eighty-seven survey items were identified during the tree survey. Of these the majority were identified as low-quality (Category C). It should be noted that a total of forty-five survey items were identified as moderate-quality (Category B - thirty in total) to high quality (Category A - fifteen in total) quality. Only three items were identified as Category 'U' and considered unsuitable for retention in the site's current context.
- 14.5 A total of six survey items will have to be removed to allow the proposed development to be implemented. These consist of one high-quality (Category A) tree, one moderate-quality (Category B) trees, one low-quality (Category C) tree and the three Category 'U' trees.
- 14.6 The three Category 'U' and considered unsuitable for retention and their removal is in accordance with good arboricultural management and irrespective of the proposed development.

- 14.7 The proposals will also result in the partial removal of a number of tree groups and hedgerows on site to allow the construction of internal access tracks and security fencing. The removals will have a mostly insignificant/minor impact and therefore be short-moderate term impacts.
- 14.8 All tree removals as a result of the proposals could be mitigated through additional tree planting as part of the landscaping scheme for the site.
- 14.9 Any potential direct impact to the identified 'Ancient Replanted Woodland' has been effectively mitigated by design through the provision of a 15m buffer (minimum) to development. This is in compliance with the Standing Advice produced by the Forestry Commission and Natural England.
- 14.10 Existing farm tracks will be utilised per access through the site. In some area minor facilitation pruning will be required.
- 14.11 The sites perimeter security fencing should act as an effective tree protection barrier if erected before construction activities commence on site. Trees within the interior of the site will still require tree protection fencing in accordance with BS5837:2012.
- 14.12 It is considered unrealistic to install full BS5837:2012 specification fencing within the interior of the site due to the excessive amount required to do so. Therefore, it is proposed that tree protection fencing that is required in areas of lower construction activity is downgraded to a lower specification.
- 14.13 In summary, on the basis that the recommendations as set out within this report are implemented, then the proposed development is considered acceptable from an arboricultural perspective.

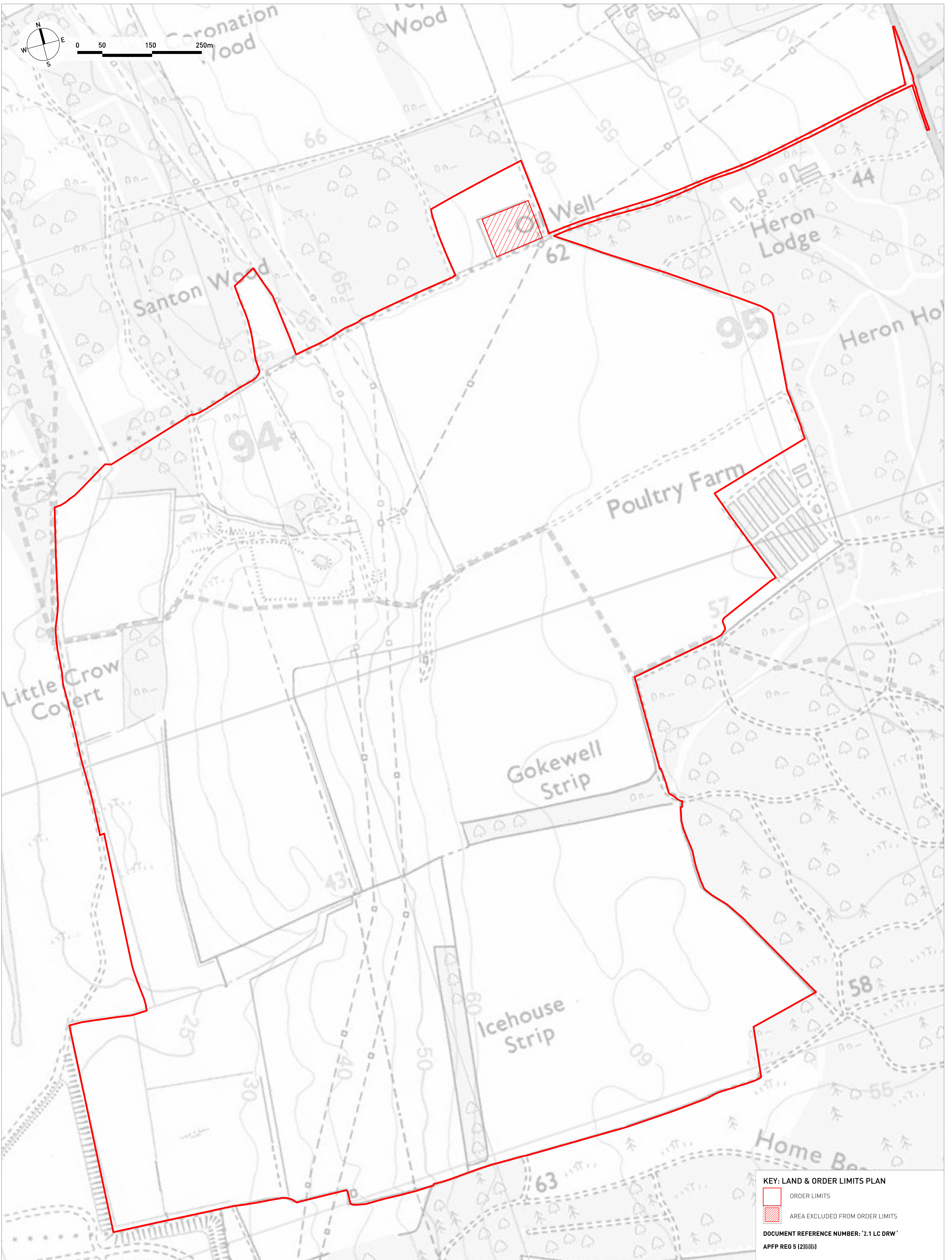
15. REFERENCES

- British Standards Institution, 2012. BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. Fourth edition. London: BSI.
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APPENDIX 1

LAND PLAN & ORDER LIMITS

[Document Ref: 2.01 LC DRW]



LITTLE CROW SOLAR PARK - LAND PLAN INCLUDING ORDER LIMITS

Pegasus Design

APPENDIX 2

TREE SURVEY METHODOLOGY AND SCHEDULE

METHODOLOGY

TREE SURVEY:

- The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (eg avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals
- The full tree survey findings are recorded in the following tree survey schedule.
- Within the tree survey schedule, each surveyed **TREE (T)**, **GROUP (G)**, **HEDGEROW (H)**, **WOODLAND (W)** or **SHRUB MASS** on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan.
- **TREE SPECIES** are listed by common name.

The DIMENSIONS taken are:

- **STEM-No.** Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- **DIAMETER** (in millimetres), obtained from the girth measured at approx.1.5m. For trees with 2 to 5 sub-stems, a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- **HEIGHT**, are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The **CROWN SPREAD** are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- **CROWN CLEARANCES** are expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- **ESTIMATES.** Where any measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

- | | |
|----|---|
| Y | Young: normally stake dependent, establishing trees. Should be growing fast, usually primarily increasing in height more than spread, but as yet making limited impact upon the landscape. |
| SM | Semi-mature: Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature). |
| EM | Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. |
| M | Mature: Well-established trees, still growing with some vigour, but tending to fill out and increase spread. Bark may be beginning to crack & fissure. In the middle half of their safe, useful life expectancies. |
| LM | Late -Mature: In full maturity but possibly beyond mature and in a state of natural decline). Still retaining some vigour but any growth is slowing. |

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY): Essentially a snapshot of the general health of the tree based upon its general appearance, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

Good	no significant health issues.
Fair	indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth)
Poor	Significant stress or disease noted; larger areas of dieback than above
Dead	(or Moribund)

STRUCTURAL CONDITION: Defects affecting the structural stability of the tree, including decay, significant dead wood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. etc. Classified as:

Good	No obvious structural defects: basically sound
Fair	Minor, potential or incipient defects
Poor	Significant defect(s) likely to lead to actual failure in the medium to long-term
Dead	(or Moribund)

REMAINING USEFUL LIFE EXPECTANCY: An estimate of the length of time in years that a tree might be expected to continue to make a useful contribution to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance)

- less than 10 years
- 10+ years
- 20+ years
- 40+ years

QUALITY CATEGORY: Trees are classed as category **U, A, B or C**, based on criteria given in BS5837:2012; summary definitions as follow (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value:

(1) **arboricultural** qualities (2) **landscape** qualities and (3) **cultural, historic or ecological/conservation** qualities. Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.

U **UNSUITABLE:** Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site usage arise as a result of development.

Dead or moribund trees; those at risk of collapse or in terminal decline; trees that will be left unstable by other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially affect other trees; low quality trees that are suppressing better specimens

(Category U trees may have conservation values that it might be desirable to preserve.

It may also include trees that should be removed irrespective of any development proposals.)

A **HIGH QUALITY:** Trees or groups whose retention should be given a particularly high priority within the design process. Normally with an expected useful life expectancy of at least 40 years.

1. *Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.)*
2. *Trees, groups or woodlands of particular visual importance as landscape features.*
3. *Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)*

B **MODERATE QUALITY:** Trees or groups of some importance with a likely useful life expectancy in excess of 20 years. Their retention would be highly desirable; selective removal of certain individuals may be acceptable, but only after full consideration of all alternative courses of action.

1. *Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)*
2. *Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees' overall, collective value).*
3. *Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.*

C **MINOR VALUE:** Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Also small trees below 15cm diam.

Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

1. *Unremarkable trees of very limited merit or of significantly impaired condition.*
2. *Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.*
Trees with extremely limited conservation or other cultural benefit.

INDIVIDUAL TREES

Ref	Species	Height (m)	No. of Stems	Est diam ?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Crown Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T1	Ash	15	1	#	800	6-8-7-7	2.0	0.5	SW	M	Mature tree located adjacent to drainage ditch, mature epicormic growth at base. Drainage ditch to the east of stem, moderate dieback in canopy with resulting deadwood.	Fair	Fair	10+	C1	9.6	290
T2	Sycamore	19	5	-	900	9-10-7.5-9	1.0	1	SE	M	Mature tree located on edge of access track. Multi stemmed at 1m, minor historic impact damage. 5m clearance height over access track. Part of larger group.	Good	Fair	20+	B2	10.8	366
T3	Weeping willow	16	1	#	800	8.5-8-9-9	1.0	1	SW	M	Mature tree located on edge of pond, good form and arboricultural feature, no access to stem base.	Fair	Fair	10+	B1	9.6	290
T4	Oak	14	1	-	830	8.5-9-8-7	15.0	3	S	M	Tree located within interior of site. Historic lightning strike to southern side of stem, tree has produced adaptive growth - no real decay but exposed heartwood. Good form but weighted to north-east.	Fair	Fair	20+	B1	10.0	312
T5	Ash	17	1	-	700	6.5-7-8.5-7	1.0	2	S	M	Tree located adjacent to pond, twin stemmed at 2m, typical mature Ash specimen.	Fair	Fair	20+	B1	8.4	222
T6	Ash	10	1	-	370	5.5-5-4-3.5	1.0	2.5	W	M	Dead tree on edge of track.	Dead	Dead	<10	U	4.4	62
T7	Horse chestnut	16	1	-	1140	9-7.5-6-8	0.2	2	E	M	Mature tree adjacent to pond. Pond to the south of stem. Good specimen tree with good form. Layered branches. Included union at 2m-some adaptive growth.	Good	Good	40+	A2	13.7	588
T8	Lawson cypress	8	1	#	300	2-2-2-2	0.2			EM	Tree located on edge of pond. Good form.	Good	Fair	20+	C1	3.6	41
T9	Oak	16	1	-	800	9-7.5-8.5-8	4.0	2.5	SE	M	Off site boundary tree. Historic failures and stag horns throughout, thinning canopy. Ditch to west.	Fair	Fair	10+	C1	9.6	290

Ref	Species	Height (m)	No. of Stems	Est diam ?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Crown Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T10	Oak	8	1	-	710	5.5-5-4-4.5	1.5	1.5	S	M	Small stunted tree, evidence of lightning strike. Plough line within 2m of stem.	Good	Fair	20+	B2	8.5	228
T11	Oak	15	1	#	850	10-7.5-8-8	1.0	1	SW	M	Good specimen tree. Drainage ditch to the east, broad canopy. Historic failures in canopy.	Good	Fair	40+	A2	10.2	327
T12	Ash	15	1	#	800	6-6-7.5-6	4.5	3.5	W	M	Tree located in boundary group, co-dominant stems at 2.5m. Drainage ditch to the east of stem, minor dieback throughout.	Fair	Fair	20+	B2	9.6	290
T13	Oak	14	1	-	830	7.5-7-7-6	1.5	2	NE	M	Tree located within boundary group. Historic pollard now with significant regrowth. Evidence of historic branch failures. Potential bat habitat.	Good	Fair	40+	B1	10.0	312
T14	Oak	Tree removed since original survey undertaken															
T15	White willow	Tree removed since original survey undertaken															
T16	Oak	11	1	-	970	8-8-5-5	1.0	2	S	M	Individual tree located in field interior, good overall form and condition. Some moderately sized deadwood.	Good	Fair	40+	A2	11.6	426
T17	Ash	12	2	#	670	7.5-9.5-7-6	3.0	2.5	E	M	Two stemmed tree located within boundary group, stem observed by Ivy. Broad tree but weighted to the east. Suppressed form.	Fair	Fair	20+	B1	8.0	203
T18	Sweet chestnut	11	1	-	550	4-3-2-3	0.2	2	N	M	Suppressed tree located in group. Extensive decay to stem - cubical brown rot. Epicormic growth to stem. Fell to ground level.	Fair	Poor	<10	U	6.6	137
T19	Scots pine	7	1	#	480	3.5-4-3.5-3	2.0	1.5	S	EM	Standard tree located within hedgerow, stem obscured by Ivy, historic limb removal-stubs remain.	Good	Fair	20+	C1	5.8	104
T20	Oak	5	1	-	880	3-3.5-3.5-3.5	2.5	2	N	M	Failed tree at 2m located in hedgerow, minor regrowth from wound. Cubical decay to stem, low risk of failure due to small sized. Some adaptive growth to stem.	Fair	Poor	10+	U	10.6	350

BS5837:2012 TREE SURVEY SCHEDULE
LITTLE CROW SOLAR PARK, SCUNTHORPE

PROJECT NO: I.2291

SURVEYOR: ACU

DATE: Sept 2017

CLIENT: INRG Solar (Little Crow) Ltd



Ref	Species	Height (m)	No. of Stems	Est diam ?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Crown Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T21	Sycamore	7	5	-	380	4-3-4-4	2.0	2	N	EM	Multi-stemmed tree located on western edge of drainage ditch and edge of field.	Good	Fair	20+	C1	4.5	65
T22	Goat willow	5	8	-	570	5-4.5-4.5-4.5	0.2	0.1	SW	EM	Self-set tree.	Good	Fair	10+	C1	6.8	147

GROUPS OF TREES

CLIENT: INRG Solar (Little Crow) Ltd

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G1	Hawthorn	5-6	6	#	200	2	0.5	SM	Two obvious groups adjacent to access track. Trimmed back away from track - 1m clearance.	Fair	Fair	20+	C2	2.4	18
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	6-18.5	100+	#	450	7.5	2.0	M	Large wooded group adjacent to access track. Drainage ditch to the west of stems which will inhibit root growth in to this area. Canopy edge 5m from access track at closest point. Good landscape feature.	Good	Fair	40+	A2	5.4	92
G3	Goat willow, Birch, Oak	5-14	50+	#	350	3.5	2.2	M	Group to trees adjacent to access track. Birch trees in decline with some standing dead trees - well within woodland and no safety risk. Better as a collective. Fell dead trees.	Fair	Fair	10+	C2	4.2	55
G4	Birch	12-14	4	-	410	6.5	2.5	M	Group of trees located adjacent to access track. Low canopy over track. Crown lift to 5m.	Good	Fair	10+	C2	4.9	76
G5	Sycamore, Hawthorn, Elder, Birch	4-18	25+	-	400	4	1.0	M	Small informal group located adjacent to access track, better as a collective, all trees suppressed and drawn up. Trees canopies adjacent to track have been lifted-adequate ground clearance of at least 5m.	Fair	Fair	20+	B2	4.8	72
G6	Sycamore, Oak, Birch	14-19	100+	#	450	5	5.0	M	Large woodland group adjacent to access track, evidence of historic canopy lifting to at least 5m. Stems approximately 1-3m from track. Significant arboricultural feature. Some recent thinning works within woodland.	Good	Fair	20+	A2	5.4	92
G7	Birch, Oak, Sycamore, Goat willow	8-19	100+	#	600	5	2.0	M	Large wooded area. Larger spacing between trees, good arboricultural feature, situated adjacent to access track.	Good	Fair	40+	A2	7.2	163

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow.	5-18	100+	#	500	5	5.0	M	Large wooded group adjacent to access track. Recently thinned, some impact damage to retained trees. Better as a collective of trees. Significant within the landscape. Drainage ditch along southern edge. Better towards the west.	Fair	Fair	40+	A2	6.0	113
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple.	6-22	100+	#	750	5	5.0	M	Area of woodland, evidence of past thinning works to western edge, high canopy structure. Adjacent to access track. Canopies over track average at 5m, stems 2-3m from track. Better trees to the east.	Fair	Fair	40+	A2	9.0	255
G10	Goat Willow, Hawthorn	5-6	10	#	200	3.5	1.0	M	Group of scrubby trees located adjacent to pond area, canopies conflicting with better adjacent tree.	Fair	Fair	10+	C2	2.4	18
G11	Ash	16.5	10	-	380	6.5	5.0	SM	Small groups located in boundary hedgerow, weighted to the south away from adjacent woodland. Access track directly adjacent to the north.	Fair	Fair	20+	B2	4.5	65
G12	Sycamore	16.5	2	-	560	7.5	5.0	M	Two obviously individual trees located on edge of larger wooded area. Canopy lifted over track in the past. Form part of larger group.	Good	Fair	20+	B2	6.7	142
G13	Hawthorn, Elder	6-7	3	#	300	3	1.0	M	Group of scrubby trees on edge of pond, some trees subsiding.	Fair	Fair	10+	C2	3.6	41
G14	Sycamore, Ash, Elder, Blackthorn.	2-6	20+	#	200	2.5	1.0	SM	Linear group of self-set trees adjacent to boundary fence. Scrubby nature.	Fair	Fair	10+	C2	2.4	18

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple.	5-18	100+	#	500	6	4.0	M	Substantial area of woodland, similar sized trees throughout. Good collective form. Closest stems approximately 2m from adjacent access track. Skirts edge of field boundary with 4-8m of headland.	Good	Fair	40+	A2	6.0	113
G16	Field maple, Elder, Ash, Blackthorn, Hazel.	3-8	50	-	100	2	1.5	SM	Areas of scrubby vegetation, overrun with bramble and nettles - no access in to group.	Fair	Fair	10+	C2	1.3	5
G17	Ash	10-14	10	#	450	7	2.0	M	Group of trees located in larger group. Ivy obscuring some stems, better as a collective.	Good	Fair	20+	B2	5.4	92
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson.	4-14	50+	#	450	5	1.0	M	Group of trees, scrubby nature, some better trees within but suppressed form.	Fair	Fair	20+	C2	5.4	92
G19	Pine, Sycamore	4-10	3	-	325	4.5	1.0	SM	Three trees in group, average form and condition.	Fair	Fair	20+	C2	3.9	48
G20	Lombardy Poplar, Lawson cypress	18	7	#	600	3.5	1.0	M	Group of trees, good collective form and landscape feature, no access to base of trees due to undergrowth.	Good	Fair	20+	B2	7.2	163
G21	Hawthorn,	4-6	50+	#	200	4	1.0	M	Linear group of trees, average condition, average measurements recorded.	Good	Good	20+	B2	2.4	18

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore.	5-11	20	#	350	4	1.0	SM	Mixed group of trees, better as a collective of trees, suppressed form.	Good	Fair	20+	B2	4.2	55
G23	Sycamore, Poplar, Hazel	4-18	100+	#	500	6	3.0	M	Small wooded group. Some tree leaning towards adjacent field. Good collective form. Some dead trees - remove dead trees.	Good	Good	20+	B2	6.0	113
G24	Poplar	22-24	9	#	500	10	4.0	M	A number of obvious groups situated within larger group. 10m+ lean in to field. Consider removing leaning stems.	Good	Fair	10+	C2	6.0	113
G25	Hawthorn, Willow, Hazel, Oak	5-7	30	#	400	3	0.5	M	Unmanaged boundary linear group. Gappy in places. Some dead trees. Remove dead trees and improve.	Fair	Fair	20+	C2	4.8	72
G26	Oak	14-16	3	-	800	8.5	2.5	M	Three similar sized trees located on field boundary. Drainage ditch to the west of stems. Historic lower limb removals, some deadwood in canopies. Good collective form.	Good	Fair	20+	B2	9.6	290
G27	Ash	9	2	#	375	6	4.0	SM	Two similar trees located in field boundary. Drainage ditch to the west. Ivy obscuring stems. Better as a collective although form is suppressed.	Fair	Fair	10+	C2	4.5	64
G28	Ash	10-15	3	#	600	6.5	3.0	M	Three similar sized trees located within field boundary group. Ivy obscuring stems, good collective form. No access to base of stems. Drainage ditch to the west. Some historic limb failures.	Fair	Fair	20+	B2	7.2	163

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G29	Hazel, Birch, Goat willow	9-17	100+	#	350	4	2.5	SM	Small wooded copse located around an existing pond. Most trees drawn up and suppressed form. Some failed trees across adjacent track.	Fair	Fair	10+	C2	4.2	55
G30	Lime, Oak	12-20	8	#	850	10	4.0	M	Good linear group, all trees drawn up and suppressed in form, Oak trees have thinning canopies. Included unions and epicormic growth at base of Lime trees.	Good	Fair	40+	A2	10.2	327
G31	Hawthorn, Willow	4-6	50+	#	175	4	1.0	M	Linear group of trees along a field boundary. Drainage ditch to the north. Gaps in places.	Fair	Fair	20+	B2	2.1	14
G32	Alder, Goat willow, Birch, Oak, Hawthorn.	5-10	200+	#	250	4	1.0	SM	Linear group which skirts the entire boundary. Good screening potential. Large ditch to the west.	Good	Fair	10+	C2	3.0	28
G33	Hawthorn	4-5.5	20	-	150	3	1.0	M	Section of hedgerow. Drainage ditch to the south.	Good	Fair	20+	B2	1.8	10
G34	Hawthorn, Elder	3-5	50+	-	200	2.5	1.0	M	Linear boundary group. Gaps in places.	Fair	Fair	10+	C2	2.4	18
G35	Hawthorn, Elder, Willow	3-6	50+	#	200	3	0.5	M	Linear group along field boundary. Good screen.	Good	Fair	20+	B2	2.4	18
G36	Hawthorn, Elder, Willow	3-6	50+	#	200	3	0.5	M	Boundary linear group. Gappy in places.	Fair	Fair	10+	C2	2.4	18
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet.	4-8	50+	-	250	3.5	2.0	M	Linear unmanaged group. Some standard trees to 8m. Mostly continuous with existing field access. Ditch running east to west.	Good	Fair	20+	B2	3.0	28

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G38	Oak, Hawthorn, Rose, Willow	2.5-5	10+	#	200	2.5	0.5	SM	Sporadically located self-set trees. Low quality.	Good	Fair	10+	C2	2.4	18
G39	Blackthorn, Hawthorn	4-7.5	20+	-	250	3	0.2	M	Scrubby group of trees. Forms part of G37. Mostly Hawthorn.	Good	Good	20+	B2	3.0	28
G40	Hazel, Hawthorn, Blackthorn	4-5	20+	-	200	2.5	1.0	M	Former hedgerow, unmanaged, now linear boundary group. Some Hawthorn dying back.	Good	Good	10+	C2	2.4	18
G41	Elder, Hawthorn, Ash	4-9	75+	-	300175	2	0.3	M	Two individual groups situated adjacent to access track. Similar sized trees but some standards to 9m. Better as a collective of trees.	Good	Fair	20+	B2	15.0	707
G42	Elder, Blackthorn, Hawthorn	3-6	50+	-	200	2.5	0.5	M	Scrubby groups of trees, much better as a collective.	Good	Good	10+	C2	2.4	18
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots/Black pine.	6-23	100+	-	550	7	3.5	M	Substantial wooded group. Important within the landscape. Dense and diverse. Average 9m overhang in to site. Some dead trees on periphery. Remove dead trees on edge of woodland. 9m headland adjacent with existing farm track.	Good	Fair	40+	A2	6.6	137
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	4-21	100+	-	650	10	4.5	M	Linear wooded group approximately 30m wide. Substantial arboricultural feature of the site. Some recent thinning work within-impact damage to retained trees/compacted soils.	Good	Fair	40+	A2	7.8	191
G45	Field maple, Elder	2-9	5	-	300	4.5	1.0	M	Small group of trees. Most substantial trees are field maple. Multi-stemmed form.	Good	Good	20+	B2	3.6	41

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	20-22	100+	-	725	10	5.0	M	Linear group of mature trees, recent thinning throughout-impact damage and soil compaction, drawn up and suppressed trees. Better as a collective. Good landscape feature.	Good	Fair	40+	A2	8.7	238
G47	Scots/black Pine, Elder, Sycamore	5-12	100+	-	325	3	4.0	SM	Substantial wooded group along boundary. Dense planting. 4m overhang in to site.	Good	Fair	20+	B2	3.9	48
G48	Sycamore, Ash, Black pine, Hawthorn.	5-19	50+	#	600	6	1.0	M	Planted mostly broadleaved group, Ivy obscuring stems, good collective form.	Good	Fair	40+	A2	7.2	163
G49	Sweet Chestnut, Ash, Elder	12-16	9	-	775	6	1.0	M	Group of similar sized trees, mostly Sweet chestnut, suppressed form. Good as a collective of trees. 'Stag horns' to some trees.	Good	Fair	40+	A2	9.3	272
G50	Elder, Willow	2-5	4	-	125	2	2.0	SM	Self-set trees on boundary. Low quality.	Good	Fair	10+	C2	1.5	7
G51	Oak	8	2	-	350	5	2.0	SM	Two trees located in hedgerow, drainage ditch to the west, suppressed form.	Good	Good	40+	B2	4.2	55
G52	Goat willow, Birch, Alder, Grey willow, Blackthorn. Oak, Sycamore.	4-13	100+	#	300	6	2.5	SM	Linear group straddling watercourse, good landscape feature although becoming scrubby towards south. Species have limited useful life expectancy. Plough-line within 2-4m of stems.	Good	Fair	10+	C2	3.6	41
G53	Birch, Hawthorn, Oak, Willow	3-9	100+	#	250	3.5	1.5	SM	Scrubby linear group of trees straddling water course, overrun with bramble.	Good	Fair	10+	C2	3.0	28

BS5837:2012 TREE SURVEY SCHEDULE

LITTLE CROW SOLAR PARK, SCUNTHORPE

PROJECT NO: I.2291

SURVEYOR: ACU

DATE: Sept 2017

CLIENT: INRG Solar (Little Crow) Ltd



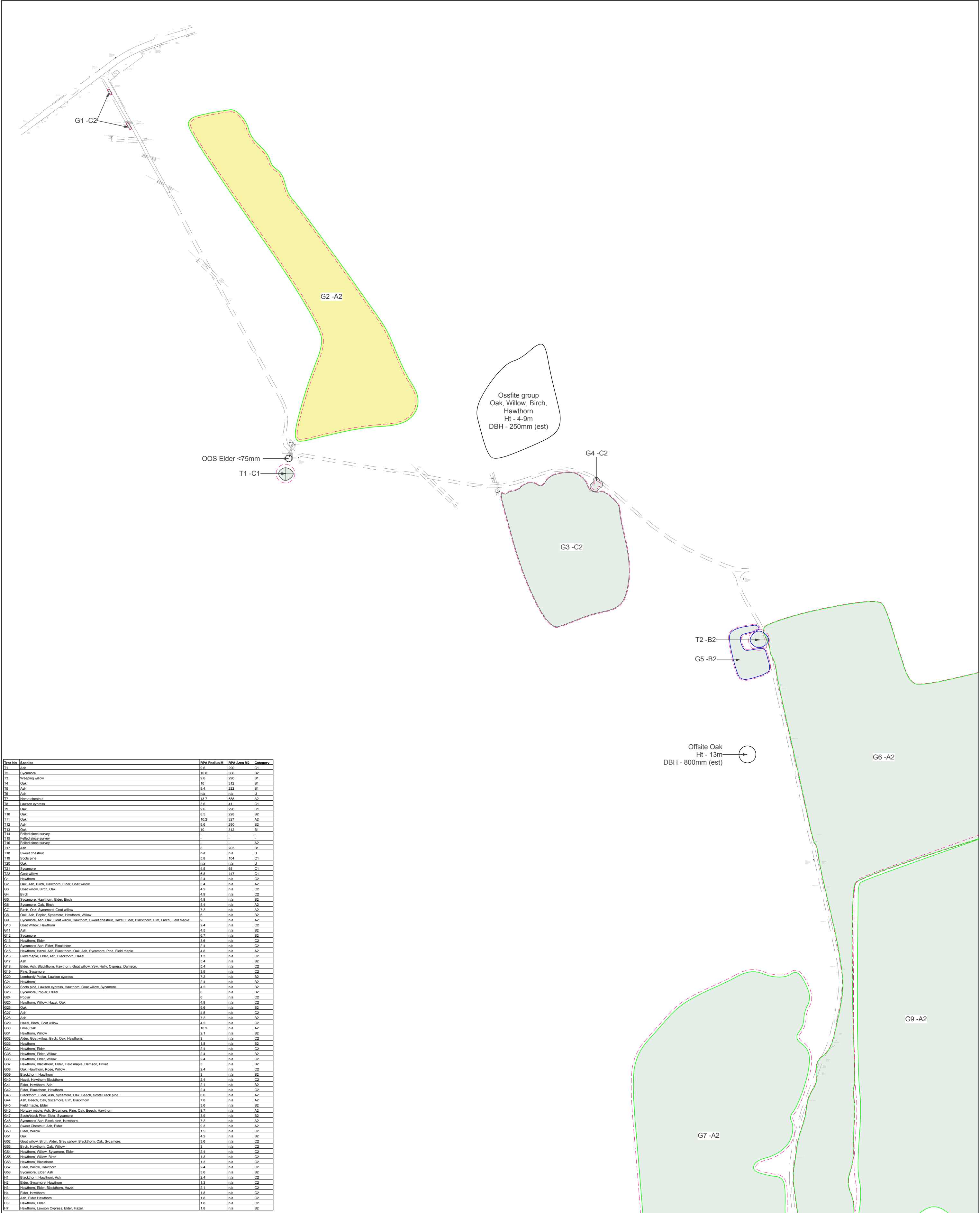
Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
G54	Hawthorn, Willow, Sycamore, Elder	2-6	50+	-	200	3	1.0	SM	Area of self-set trees around earth mound.	Good	Good	10+	C2	2.4	18
G55	Hawthorn, Willow, Birch	2-5	100+	-	100	1.5	0.5	EM	Scrubby linear group of trees, offers some screening. Becoming sparse to the south. Trees to south are located on bund.	Good	Good	10+	C2	1.3	5
G56	Hawthorn, Blackthorn	3-4	50+	-	100	1	0.5	EM	Scrubby group. Thicket in places. Straddling watercourse.	Good	Good	10+	C2	1.3	5
G57	Elder, Willow, Hawthorn	2-5	10+	-	200	2	0.3	SM	Sections of old hedgerow, some self-set Willow.	Fair	Fair	10+	C2	2.4	18
G58	Sycamore, Elder, Ash	6-10	50+	-	300	3	1.0	SM	Linear planted screen adjacent to chicken farm, good as a collective. Sparse towards the east.	Good	Fair	20+	B2	3.6	41

HEDGES

Ref	Species	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Crown Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
H1	Blackthorn, Hawthorn, Ash	6	3	200	1.0	M	Original unmanaged hedgerow, access track directly to the north of stems, some dead trees within group. Remove dead trees.	Fair	Fair	10+	C2	2.4	18
H2	Elder, Sycamore, Hawthorn	2	2.5	100	0.5	M	Managed field boundary hedgerow, gappy in places.	Fair	Fair	10+	C2	1.3	5
H3	Hawthorn, Elder, Blackthorn, Hazel.	4	3.52	175	0.2	M	Linear group. Pruned (reduced) away from powerlines. Drainage ditch to the west. Very gappy. Could be improved by infill planting.	Good	Fair	10+	C2	2.1	14
H4	Elder, Hawthorn	3	2	150	0.5	M	Gappy field boundary hedgerow. Managed but could be improved by infill planting.	Fair	Fair	10+	C2	1.8	10
H5	Ash, Elder Hawthorn	4	3	150	0.5	M	Managed hedgerow to the east of larger group.	Good	Good	10+	C2	1.8	10
H6	Hawthorn, Elder	3	2	150	0.3	M	Gappy hedgerow, unmanaged and mostly elder. Standards to 9m towards southern end.	Fair	Fair	10+	C2	1.8	10
H7	Hawthorn, Lawson Cypress, Elder, Hazel.	4	3	150	0.3	M	Unmanaged hedgerow, gaps in places, overrun with bramble in places. Ditch to the west of stems.	Fair	Fair	20+	B2	1.8	10

APPENDIX 3

TREE SURVEY AND CONSTRAINTS PLAN



Tree No.	Species	DBH	HT	Category
T1	Ash	9.8	200	C1
T2	Sycamore	10.8	205	B2
T3	Willow	9.8	200	B1
T4	Oak	10	212	B1
T5	Ash	8.4	222	B1
T6	Ash	10.8	200	B1
T7	Horse chestnut	13.7	288	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	8.6	200	C1
T10	Oak	8.6	228	B2
T11	Oak	10.2	227	A2
T12	Ash	9.8	200	B2
T13	Oak	10	212	B1
T14	Felled since survey	-	-	-
T15	Felled since survey	-	-	-
T16	Felled since survey	-	-	-
T17	Ash	8	203	B1
T18	Sweet chestnut	10.8	200	B1
T19	Scots pine	5.8	104	C1
T20	Oak	10.8	200	B1
T21	Sycamore	4.6	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	10.8	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	10.8	A2
G3	Goat willow, Birch, Oak	4.2	10.8	C2
G4	Birch	4.9	10.8	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	10.8	B2
G6	Sycamore, Oak, Birch	5.4	10.8	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	10.8	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	10.8	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9	10.8	A2
G10	Goat willow, Hawthorn	2.4	10.8	C2
G11	Ash	4.9	10.8	B2
G12	Sycamore	6.7	10.8	B2
G13	Hawthorn, Elder	3.6	10.8	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	10.8	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	10.8	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	10.8	C2
G17	Ash	5.4	10.8	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	10.8	C2
G19	Pine, Sycamore	3.9	10.8	C2
G20	Lombardy Poplar, Lawson cypress	7.2	10.8	B2
G21	Hawthorn	2.4	10.8	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	10.8	B2
G23	Sycamore, Poplar, Hazel	6	10.8	B2
G24	Poplar	6	10.8	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	10.8	C2
G26	Oak	9.8	10.8	B2
G27	Ash	4.6	10.8	C2
G28	Ash	7.2	10.8	B2
G29	Hazel, Birch, Goat willow	4.2	10.8	C2
G30	Lime, Oak	10.2	10.8	A2
G31	Hawthorn, Willow	2.1	10.8	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	10.8	C2
G33	Hawthorn	1.8	10.8	B2
G34	Hawthorn, Elder	2.4	10.8	C2
G35	Hawthorn, Elder, Willow	2.4	10.8	B2
G36	Hawthorn, Elder, Willow	2.4	10.8	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	10.8	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	10.8	C2
G39	Blackthorn, Hawthorn	3	10.8	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	10.8	C2
G41	Elder, Hawthorn, Ash	2.1	10.8	B2
G42	Elder, Blackthorn, Hawthorn	2.4	10.8	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots pine	6.6	10.8	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	10.8	A2
G45	Field maple, Elder	3.6	10.8	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	6.7	10.8	A2
G47	Scots pine, Elder, Sycamore	3.9	10.8	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	10.8	A2
G49	Sweet chestnut, Ash, Elder	6.3	10.8	A2
G50	Elder, Willow	1.5	10.8	B2
G51	Oak	4.2	10.8	B2
G52	Goat willow, Birch, Alder, Grey alder, Blackthorn, Oak, Sycamore	3.6	10.8	C2
G53	Birch, Hawthorn, Oak, Willow	3	10.8	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	10.8	C2
G55	Hawthorn, Willow, Birch	1.3	10.8	C2
G56	Hawthorn, Blackthorn	1.3	10.8	C2
G57	Elder, Willow, Hawthorn	2.4	10.8	C2
G58	Sycamore, Elder, Ash	3.6	10.8	B2
H1	Blackthorn, Hawthorn, Ash	2.4	10.8	C2
H2	Elder, Sycamore, Hawthorn	1.3	10.8	C2
H3	Hawthorn, Elder, Blackthorn, Hazel	2.1	10.8	C2
H4	Elder, Hawthorn	1.8	10.8	C2
H5	Ash, Elder, Hawthorn	1.8	10.8	C2
H6	Hawthorn, Elder	1.8	10.8	C2
H7	Hawthorn, Lawson cypress, Elder, Hazel	1.8	10.8	B2

KEY BS 5837: 2012 Categories

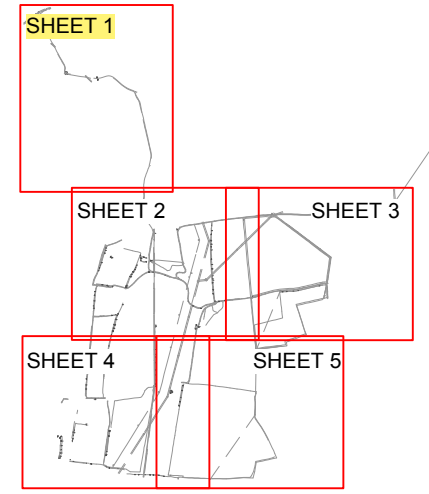
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- Tree Category B - Moderate Quality
- Tree Category C - Low Quality
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsite Tree / OOS (Out of scope)

Tree Preservation Order (TPO) High Sanction, Burnt Strip No.1 & No.2 - Order 1985

Ancient Replanted Woodland

Scale: 0 20 40 60 80 100 Meters

GRID NORTH



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (L2991)

DRAWING TITLE
Tree Survey & Constraints

SCALE 1:2500 @ A2 **DRAWING NUMBER** BHA_235_01

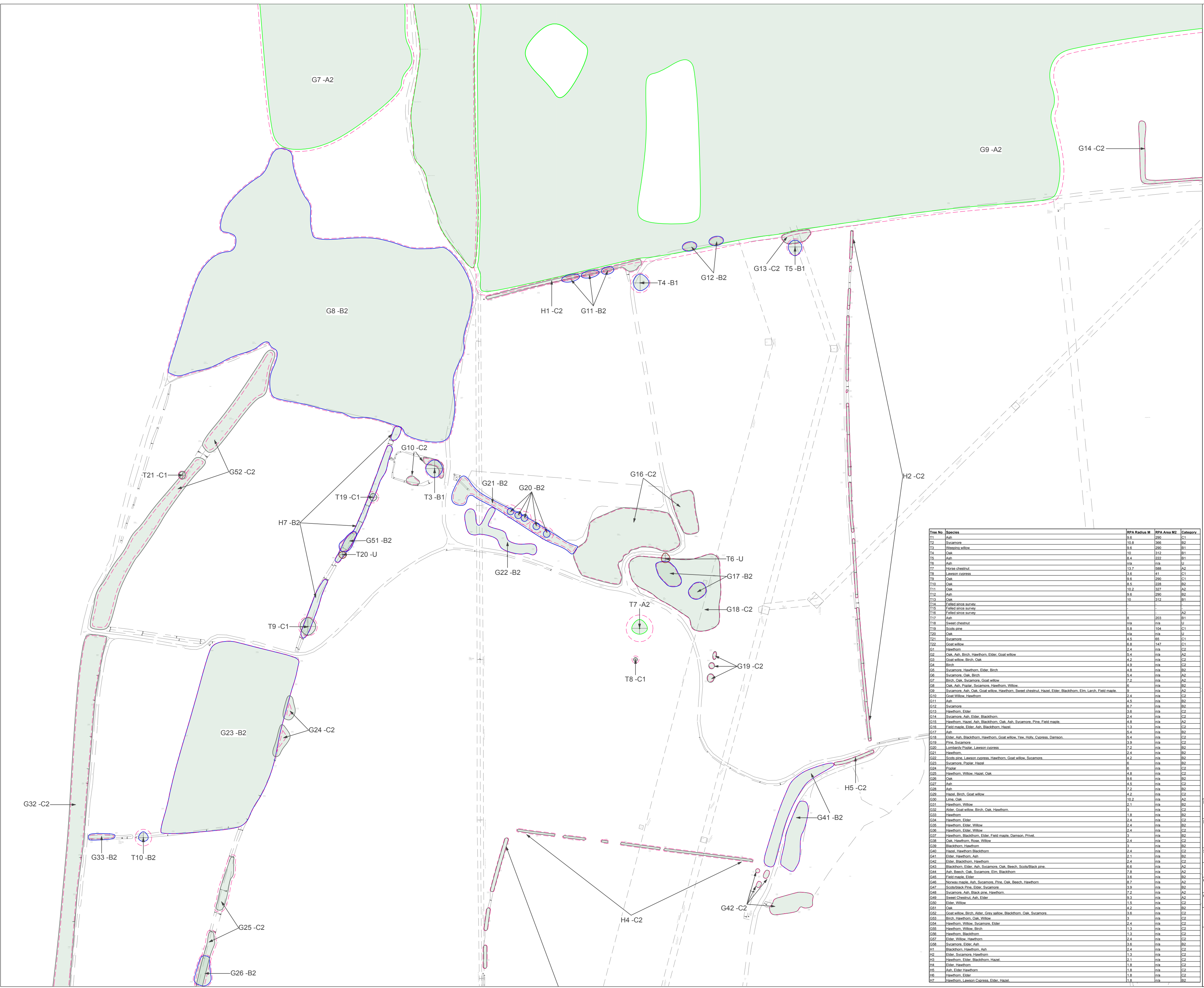
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CLIENT INRG Solar Ltd

COORDINATE SYSTEM / DATUM British National Grid / Newlyn Datum (AOD)

Barton Hyett Associates
Arboricultural Consultants

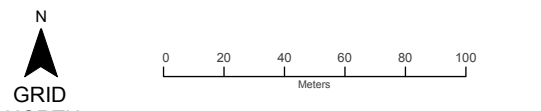
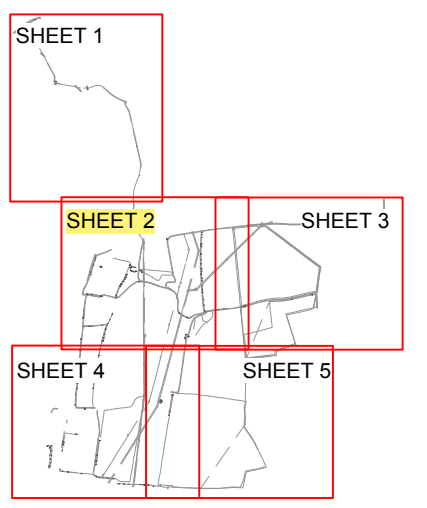
Tel: 01386 576161
Address: Office SE, Deer Park Business Centre, Eckington, Pershore, Worcestershire, WR10 3DN



KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- U Category - Hedgerow, Group, Woodland
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsite Tree / OGS (Out of scope)
- Tree Preservation Order (TPO)
High Stanton, Burnt Strip No.1 & No.2 - Order 1985
- Ancient Replanted Woodland

Tree No.	Species	RPA Radius M	RPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.8	366	B2
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	9.6	290	B1
T6	Ash	9.6	290	B1
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Felled since survey	-	-	-
T15	Felled since survey	-	-	-
T16	Felled since survey	-	-	-
T17	Ash	8	203	B1
T18	Sweet chestnut	9.6	290	B1
T19	Scott pine	9.6	290	U
T20	Oak	9.6	290	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	9.6	290	B1
G1	Hawthorn	2.4	72	A2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	2.4	72	A2
G3	Goat willow, Birch, Oak	2.4	72	A2
G4	Birch	4.8	144	A2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	144	A2
G6	Sycamore, Oak, Birch	4.8	144	A2
G7	Birch, Oak, Sycamore, Goat willow	2.4	72	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	9.6	290	A2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9.6	290	A2
G10	Goat willow, Hawthorn	2.4	72	A2
G11	Ash	4.5	65	B2
G12	Sycamore	9.6	290	B2
G13	Hawthorn, Elder	3.6	126	B2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	72	A2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	144	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	26	A2
G17	Ash	5.4	162	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypripedium	4.2	126	A2
G19	Pine, Sycamore	3.9	152	A2
G20	Lombardy Poplar, Lawson cypress	2.2	154	B2
G21	Hawthorn	2.4	72	B2
G22	Scott pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	156	B2
G23	Sycamore, Poplar, Hazel	9.6	290	B2
G24	Poplar	9.6	290	B2
G25	Hawthorn, Willow, Hazel, Oak	4.8	144	A2
G26	Oak	9.6	290	B2
G27	Ash	4.5	65	B2
G28	Ash	7.2	162	B2
G29	Hazel, Birch, Goat willow	4.2	126	A2
G30	Lime, Oak	10.2	327	A2
G31	Hawthorn, Willow	2.1	44	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	71	A2
G33	Hawthorn, Elder	2.4	58	B2
G34	Hawthorn, Elder	2.4	58	B2
G35	Hawthorn, Elder, Willow	2.4	58	B2
G36	Hawthorn, Elder, Willow	2.4	58	B2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	71	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	58	A2
G39	Hawthorn, Blackthorn	2.4	58	A2
G40	Hazel, Hawthorn, Blackthorn	2.4	58	A2
G41	Elder, Hawthorn, Ash	2.1	44	B2
G42	Elder, Blackthorn, Hawthorn	2.4	58	A2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	9.6	290	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	188	A2
G45	Field maple, Elder	1.8	36	A2
G46	Norway spruce, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	219	A2
G47	Scots Black pine, Elder, Sycamore	3.9	152	B2
G48	Sycamore, Ash, Black pine, Hawthorn	9.6	290	B2
G49	Sweet Chestnut, Ash, Elder	9.6	290	A2
G50	Elder, Willow	1.5	23	C2
G51	Oak	4.2	126	A2
G52	Goat willow, Birch, Alder, Grey sallow, Blackthorn, Oak, Sycamore	3.6	126	A2
G53	Birch, Hawthorn, Oak, Willow	3	71	A2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	58	A2
G55	Hawthorn, Willow	1.3	26	A2
G56	Hawthorn, Blackthorn	1.3	26	A2
G57	Elder, Willow, Hawthorn	2.4	58	A2
G58	Sycamore, Elder, Ash	3.6	126	B2
H1	Blackthorn, Hawthorn, Ash	2.4	58	A2
H2	Elder, Sycamore, Hawthorn	1.3	26	A2
H3	Hawthorn, Elder, Blackthorn, Hazel	2.1	44	A2
H4	Elder, Hawthorn	1.8	36	A2
H5	Ash, Elder, Hawthorn	1.8	36	A2
H6	Hawthorn, Elder	1.8	36	A2
H7	Hawthorn, Lawson cypress, Elder, Hazel	1.8	36	B2



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (1.2991)

DRAWING TITLE
Tree Survey & Constraints

SCALE	1:2500 @ A2	DRAWING NUMBER	BHA_235_01
DRAWN BY	SD	APPROVED BY	AC
REVISION	-	SHEET	2/5
DATE	24/09/2017		

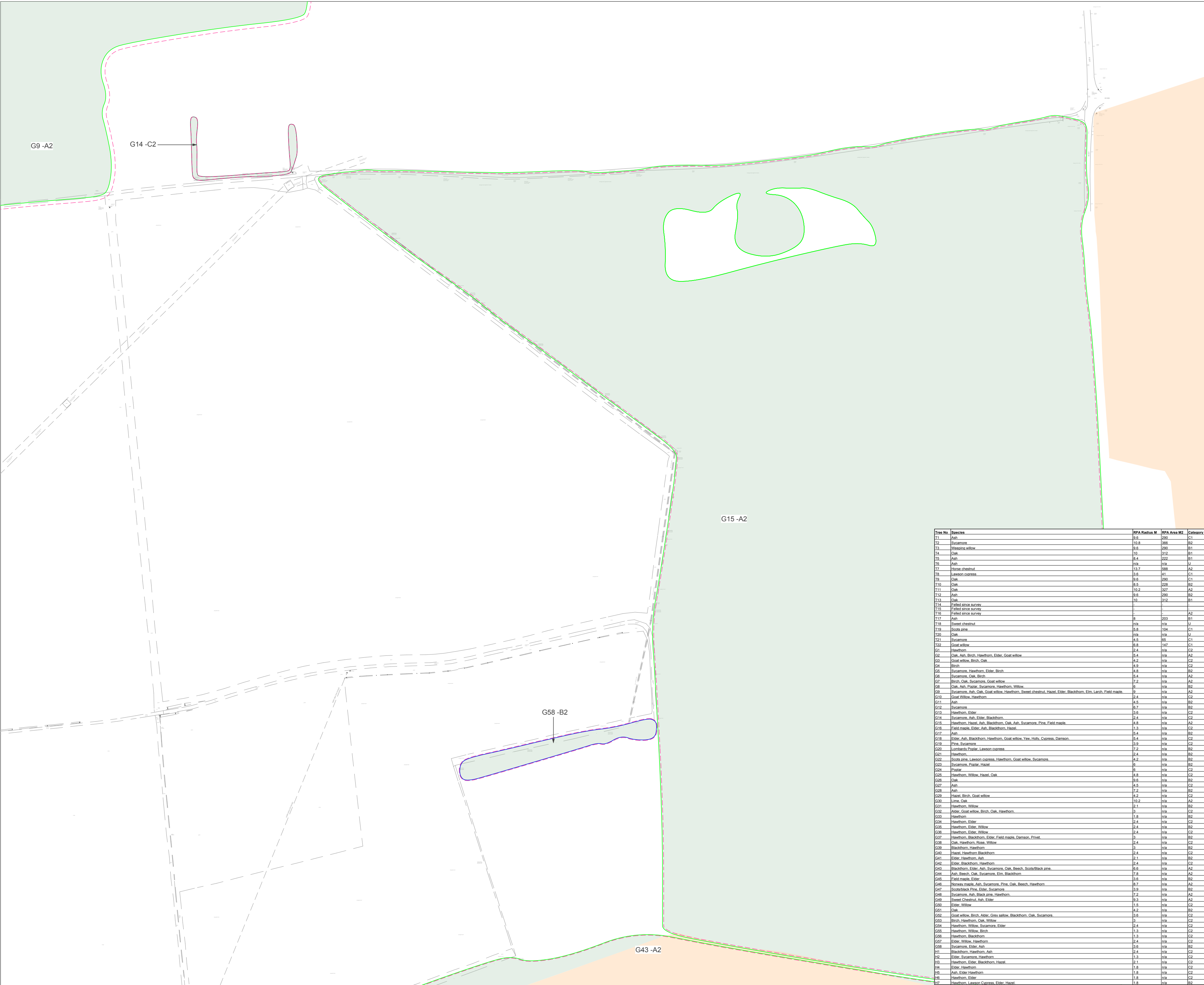
CLIENT
INRG Solar Ltd

COORDINATE SYSTEM / DATUM
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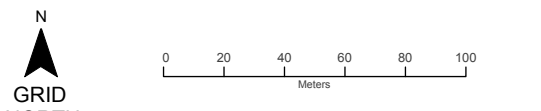
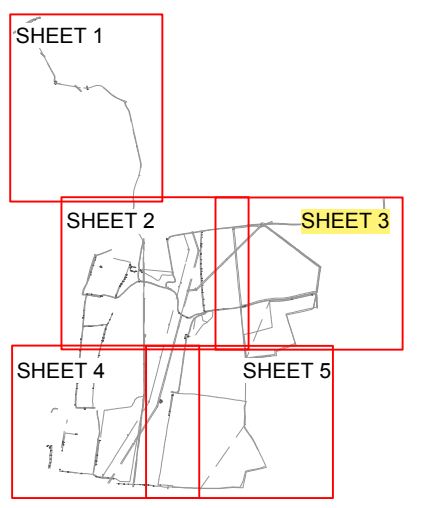
Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN



- KEY** BS 5837 : 2012 Categories
- Tree Category A - High Quality
 - A Category - Hedgerow, Group, Woodland
 - Tree Category B - Moderate Quality
 - B Category - Hedgerow, Group, Woodland
 - Tree Category C - Low Quality
 - C Category - Hedgerow, Group, Woodland
 - Tree Category U - Unsuitable for Retention
 - U Category - Hedgerow, Group, Woodland
 - Root Protection Area to BS 5837:2012
 - Shrub Mass / Offsite Tree / OGS (Out of scope)
 - Tree Preservation Order (TPO)
High Stanton, Burnt Strip No.1 & No.2 - Order 1985
 - Ancient Replanted Woodland

Tree No.	Species	RPA Radius M	RPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.8	366	B2
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	B1
T6	Ash	10.8	366	U
T7	Horse chestnut	13.7	588	A2
T8	Larson cypress	3.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Felled since survey	-	-	A2
T15	Felled since survey	-	-	A2
T16	Felled since survey	-	-	A2
T17	Ash	8	203	B1
T18	Sweet chestnut	10.8	366	U
T19	Scotts pine	9.6	290	U
T20	Oak	10.8	366	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	72	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	81	A2
G3	Goat willow, Birch, Oak	2.4	72	C2
G4	Birch	4.8	144	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	144	A2
G6	Sycamore, Oak, Birch	2.4	72	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	129	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	108	A2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	2.4	72	A2
G10	Goat willow, Hawthorn	2.4	72	C2
G11	Ash	4.5	65	B2
G12	Sycamore	8.7	198	B2
G13	Hawthorn, Elder	3.6	129	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	72	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	144	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	39	A2
G17	Ash	5.4	108	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	2.4	72	C2
G19	Pine, Sycamore	3.9	117	C2
G20	Lombardy Poplar, Lawson cypress	7.2	129	B2
G21	Hawthorn	2.4	72	B2
G22	Scotts pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	129	B2
G23	Sycamore, Poplar, Hazel	6	108	B2
G24	Poplar	6	108	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	144	C2
G26	Oak	9.6	290	B2
G27	Ash	4.5	65	B2
G28	Ash	7.2	129	B2
G29	Hazel, Birch, Goat willow	4.2	129	C2
G30	Lime, Oak	10.2	327	A2
G31	Hawthorn, Willow	2.1	63	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	90	C2
G33	Hawthorn	1.8	54	B2
G34	Hawthorn, Elder	2.4	72	C2
G35	Hawthorn, Elder, Willow	2.4	72	B2
G36	Hawthorn, Elder, Willow	2.4	72	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	90	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	72	C2
G39	Hawthorn	3	90	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	72	C2
G41	Elder, Hawthorn, Ash	2.1	63	B2
G42	Elder, Blackthorn, Hawthorn	2.4	72	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	6.6	198	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	234	A2
G45	Field maple, Elder	1.8	54	A2
G46	Norway spruce, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	234	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	117	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	129	A2
G49	Sweet Chestnut, Ash, Elder	6.3	198	A2
G50	Elder, Willow	1.5	45	C2
G51	Oak	4.2	129	C2
G52	Goat willow, Birch, Alder, Grey sallow, Blackthorn, Oak, Sycamore	3.6	129	C2
G53	Birch, Hawthorn, Oak, Willow	3	90	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	72	C2
G55	Hawthorn, Willow, Birch	1.3	39	C2
G56	Hawthorn, Blackthorn	1.3	39	C2
G57	Elder, Willow, Hawthorn	2.4	72	B2
G58	Sycamore, Elder, Ash	3.6	129	B2
H1	Blackthorn, Hawthorn, Ash	2.4	72	C2
H2	Elder, Sycamore, Hawthorn	1.3	39	C2
H3	Hawthorn, Elder, Blackthorn, Hazel	2.1	63	C2
H4	Elder, Hawthorn	1.8	54	C2
H5	Ash, Elder, Hawthorn	1.8	54	C2
H6	Hawthorn, Elder	1.8	54	C2
H7	Hawthorn, Lawson cypress, Elder, Hazel	1.8	54	B2



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (1.2991)

DRAWING TITLE
Tree Survey & Constraints

SCALE 1:2500 @ A2 **DRAWING NUMBER** BHA_235_01

DRAWN BY SD **APPROVED BY** AC **REVISION** - **SHEET** 3/5 **DATE** 24/09/2017

CLIENT INRG Solar Ltd

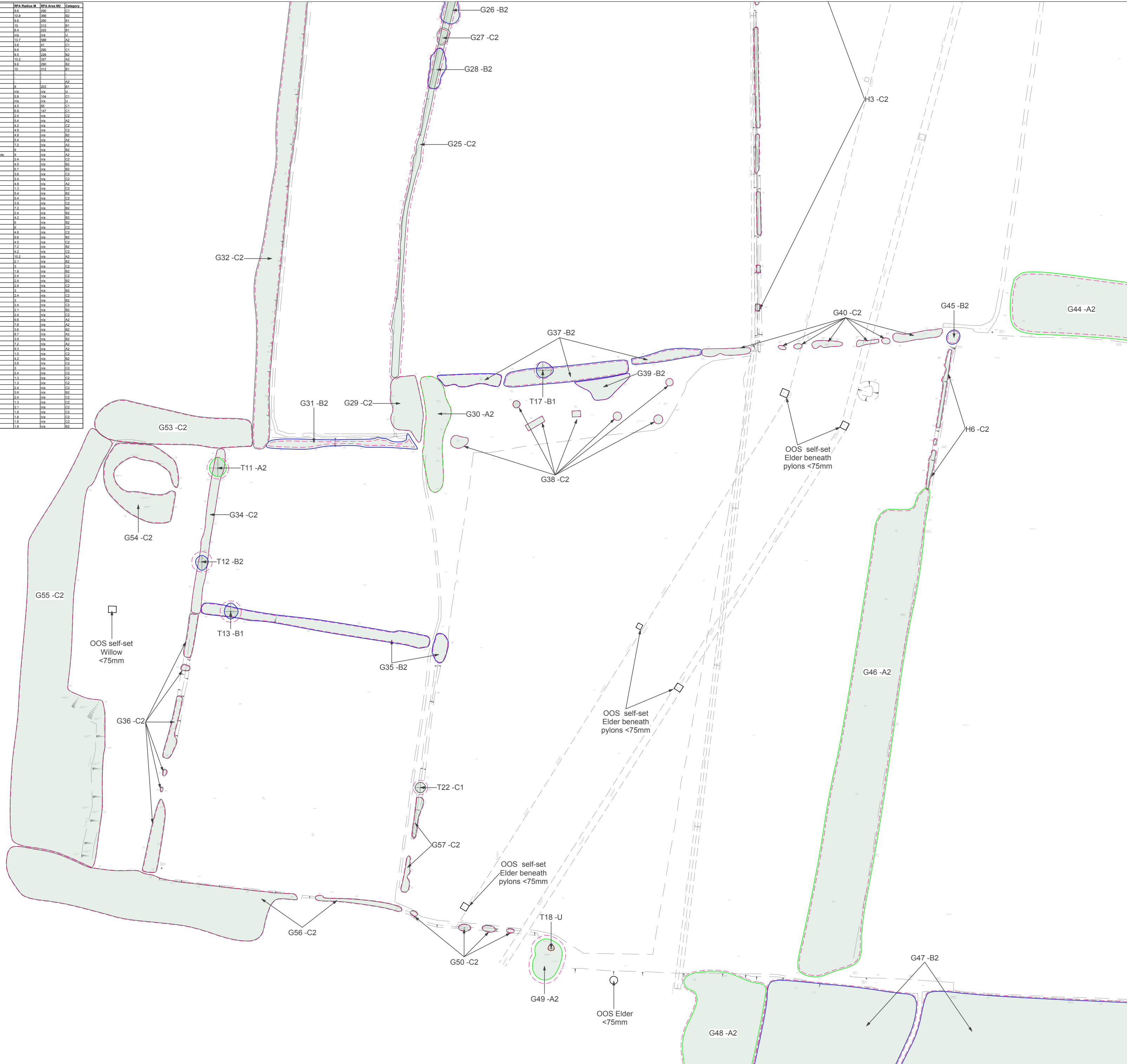
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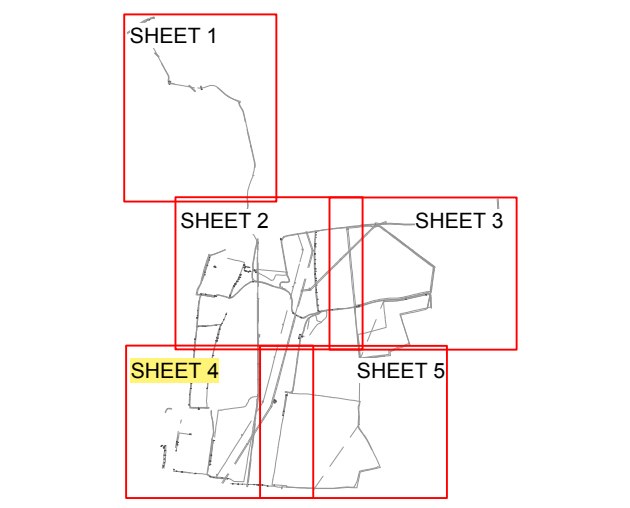
Tel 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN

Tree No	Species	RPA Radius M	RPA Area M ²	Category
11	Ash	10.0	314	C1
12	Sycamore	10.0	314	B2
13	Willow	10.0	314	B1
14	Ash	10.0	314	B1
15	Ash	10.0	314	B1
16	Ash	10.0	314	B1
17	Willow	10.0	314	A2
18	Willow	10.0	314	C1
19	Willow	10.0	314	C1
20	Willow	10.0	314	A2
21	Willow	10.0	314	A2
22	Willow	10.0	314	B2
23	Willow	10.0	314	B1
24	Willow	10.0	314	B1
25	Willow	10.0	314	B1
26	Willow	10.0	314	B1
27	Willow	10.0	314	B1
28	Willow	10.0	314	B1
29	Willow	10.0	314	B1
30	Willow	10.0	314	B1
31	Willow	10.0	314	B1
32	Willow	10.0	314	B1
33	Willow	10.0	314	B1
34	Willow	10.0	314	B1
35	Willow	10.0	314	B1
36	Willow	10.0	314	B1
37	Willow	10.0	314	B1
38	Willow	10.0	314	B1
39	Willow	10.0	314	B1
40	Willow	10.0	314	B1
41	Willow	10.0	314	B1
42	Willow	10.0	314	B1
43	Willow	10.0	314	B1
44	Willow	10.0	314	B1
45	Willow	10.0	314	B1
46	Willow	10.0	314	B1
47	Willow	10.0	314	B1
48	Willow	10.0	314	B1
49	Willow	10.0	314	B1
50	Willow	10.0	314	B1
51	Willow	10.0	314	B1
52	Willow	10.0	314	B1
53	Willow	10.0	314	B1
54	Willow	10.0	314	B1
55	Willow	10.0	314	B1
56	Willow	10.0	314	B1
57	Willow	10.0	314	B1
58	Willow	10.0	314	B1
59	Willow	10.0	314	B1
60	Willow	10.0	314	B1
61	Willow	10.0	314	B1
62	Willow	10.0	314	B1
63	Willow	10.0	314	B1
64	Willow	10.0	314	B1
65	Willow	10.0	314	B1
66	Willow	10.0	314	B1
67	Willow	10.0	314	B1
68	Willow	10.0	314	B1
69	Willow	10.0	314	B1
70	Willow	10.0	314	B1
71	Willow	10.0	314	B1
72	Willow	10.0	314	B1
73	Willow	10.0	314	B1
74	Willow	10.0	314	B1
75	Willow	10.0	314	B1
76	Willow	10.0	314	B1
77	Willow	10.0	314	B1
78	Willow	10.0	314	B1
79	Willow	10.0	314	B1
80	Willow	10.0	314	B1
81	Willow	10.0	314	B1
82	Willow	10.0	314	B1
83	Willow	10.0	314	B1
84	Willow	10.0	314	B1
85	Willow	10.0	314	B1
86	Willow	10.0	314	B1
87	Willow	10.0	314	B1
88	Willow	10.0	314	B1
89	Willow	10.0	314	B1
90	Willow	10.0	314	B1
91	Willow	10.0	314	B1
92	Willow	10.0	314	B1
93	Willow	10.0	314	B1
94	Willow	10.0	314	B1
95	Willow	10.0	314	B1
96	Willow	10.0	314	B1
97	Willow	10.0	314	B1
98	Willow	10.0	314	B1
99	Willow	10.0	314	B1
100	Willow	10.0	314	B1



KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
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- C Category - Hedgerow, Group, Woodland
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- Shrub Mass / Off-site Tree / OGS (Out of scope)
- Tree Preservation Order (TPO)
- High Stanton, Burnt Strip No.1 & No.2 - Order 1985
- Ancient Replanted Woodland



GRID NORTH

0 20 40 60 80 100 Meters

PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (I.2991)

DRAWING TITLE
Tree Survey & Constraints

SCALE: **1:2500 @ A2** DRAWING NUMBER: **BHA_235_01**

DRAWN BY: SD	APPROVED BY: AC	REVISION: -	SHEET: 4/5	DATE: 24/09/2017
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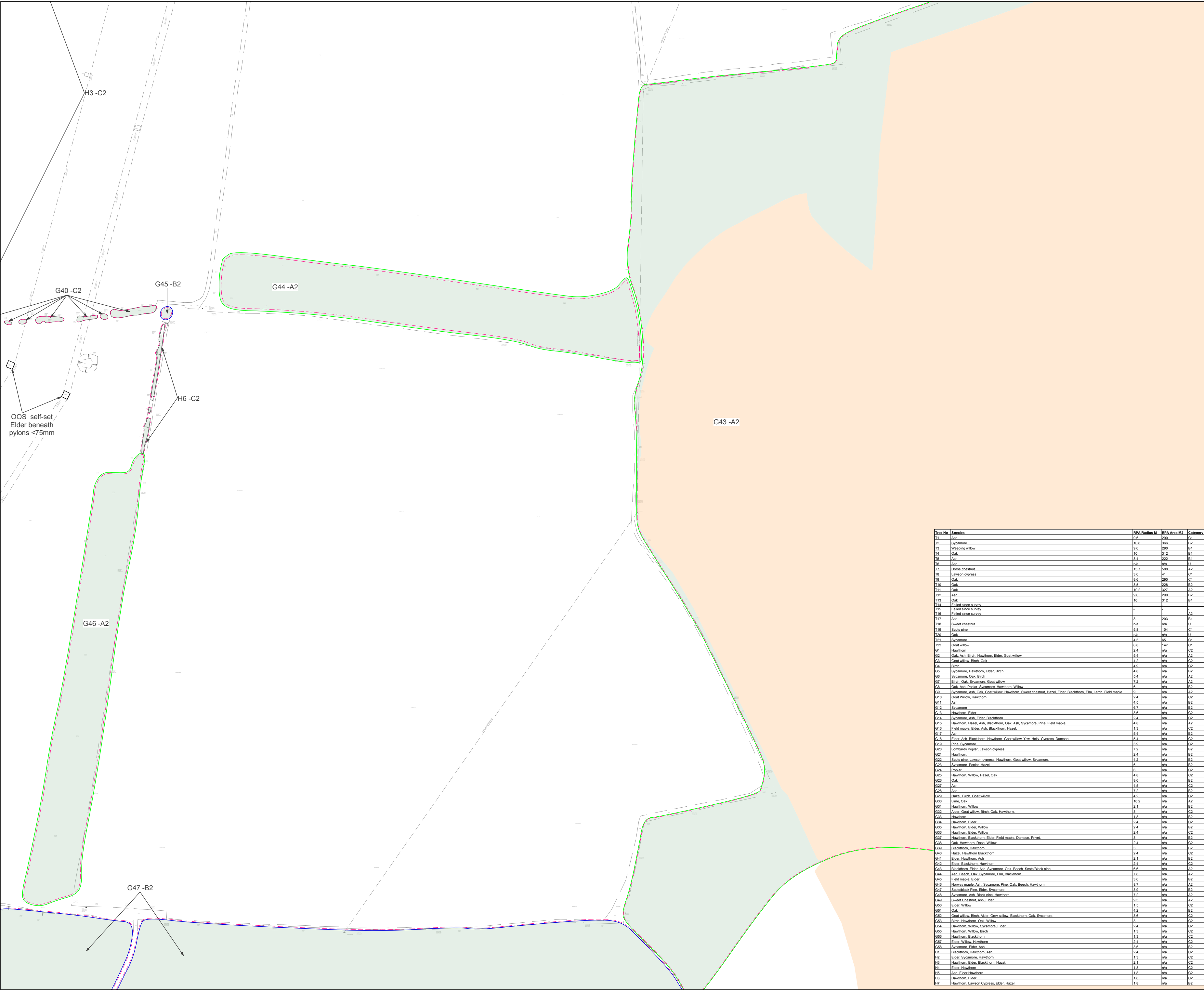
CLIENT: **INRG Solar Ltd**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

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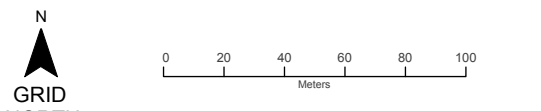
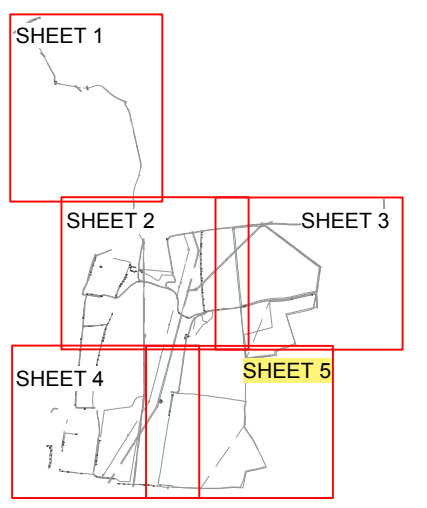
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- KEY** BS 5837 : 2012 Categories
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 - Tree Preservation Order (TPO)
High Santon, Burnt Strip No.1 & No.2 - Order 1985
 - Ancient Replanted Woodland

Tree No.	Species	RPA Radius M	RPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.8	366	B2
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	U
T6	Ash	10.8	366	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Felled since survey	-	-	-
T15	Felled since survey	-	-	-
T16	Felled since survey	-	-	-
T17	Ash	8	203	B1
T18	Sweet chestnut	10.8	366	U
T19	Scotts pine	3.6	104	C1
T20	Oak	10.8	366	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	2.4	147	C1
G1	Hawthorn	2.4	n/a	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	2.4	n/a	A2
G3	Goat willow, Birch, Oak	2.4	n/a	C2
G4	Birch	4.8	n/a	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	n/a	B2
G6	Sycamore, Oak, Birch	4.8	n/a	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	n/a	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	n/a	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	2.4	n/a	A2
G10	Goat Willow, Hawthorn	2.4	n/a	C2
G11	Ash	4.5	n/a	B2
G12	Sycamore	2.7	n/a	B2
G13	Hawthorn, Elder	3.6	n/a	B2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	n/a	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	n/a	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	n/a	B2
G17	Ash	5.4	n/a	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	2.4	n/a	C2
G19	Pine, Sycamore	3.9	n/a	C2
G20	Lombardy Poplar, Lawson cypress	7.2	n/a	B2
G21	Hawthorn	2.4	n/a	B2
G22	Scotts pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	n/a	B2
G23	Sycamore, Poplar, Hazel	6	n/a	B2
G24	Poplar	6	n/a	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	n/a	C2
G26	Oak	9.6	n/a	B2
G27	Ash	7.2	n/a	B2
G28	Ash	7.2	n/a	B2
G29	Hazel, Birch, Goat willow	4.2	n/a	A2
G30	Lime, Oak	10.2	n/a	C2
G31	Hawthorn, Willow	2.1	n/a	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	n/a	C2
G33	Hawthorn	1.8	n/a	B2
G34	Hawthorn, Elder	2.4	n/a	C2
G35	Hawthorn, Elder, Willow	2.4	n/a	B2
G36	Hawthorn, Elder, Willow	2.4	n/a	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	n/a	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	n/a	C2
G39	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G40	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G41	Elder, Hawthorn, Ash	2.1	n/a	B2
G42	Elder, Blackthorn, Hawthorn	2.4	n/a	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	6.6	n/a	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	n/a	A2
G45	Field maple, Elder	8.7	n/a	A2
G46	Norway spruce, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	n/a	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	n/a	B2
G48	Sycamore, Ash, Black pine, Hawthorn	6.3	n/a	A2
G49	Sweet Chestnut, Ash, Elder	6.3	n/a	A2
G50	Elder, Willow	1.5	n/a	C2
G51	Oak	4.2	n/a	B2
G52	Goat willow, Birch, Alder, Grey sallow, Blackthorn, Oak, Sycamore	3.6	n/a	C2
G53	Birch, Hawthorn, Oak, Willow	3	n/a	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	n/a	C2
G55	Hawthorn, Willow, Birch	1.3	n/a	C2
G56	Hawthorn, Blackthorn	1.3	n/a	C2
G57	Elder, Willow, Hawthorn	2.4	n/a	C2
G58	Sycamore, Elder, Ash	3.6	n/a	B2
H1	Blackthorn, Hawthorn, Ash	2.4	n/a	C2
H2	Hawthorn, Elder, Blackthorn, Hazel	1.3	n/a	C2
H3	Elder, Hawthorn	2.1	n/a	C2
H4	Elder, Hawthorn	1.8	n/a	C2
H5	Ash, Elder, Hawthorn	1.8	n/a	C2
H6	Hawthorn, Elder	1.8	n/a	C2
H7	Hawthorn, Lawson cypress, Elder, Hazel	1.8	n/a	B2



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (1.2991)

DRAWING TITLE
Tree Survey & Constraints

SCALE: **1:2500 @ A2** DRAWING NUMBER: **BHA_235_01**

DRAWN BY: **SD** APPROVED BY: **AC** REVISION: **-** SHEET: **5/5** DATE: **24/09/2017**

CLIENT: **INRG Solar Ltd**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

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Arboricultural Consultants

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Eckington, Pershore, Worcestershire, WR10 3DN

APPENDIX 4

ARBORICULTURAL IMPACT SCHEDULE

ARBORICULTURAL IMPACTS SCHEDULE

LITTLE CROW SOLAR PARK, SCUNTHORPE

PROJECT NO: I.291

ARBORICULTURIST: ACU

DATE: NOVEMBER 2019 (Revised 06.08.20)

CLIENT: INRG SOLAR (LITTLE CROW) LTD



No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T1	Ash	C1	Located off-site to the north-west of site.	None	None	None	None	None	No
T2	Sycamore	B2	Located off-site to the north-west of site.	None	None	None	None	None	No
T3	Weeping willow	B1	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
T4	Oak	B1	Located within the northern region and within interior of site. Removal required to impliment development	High	Major	Mitigation planting as part of the landscaping scheme for the site.	Medium	Moderate	Yes
T5	Ash	B1	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
T6	Ash	U	Removal in accordance with good arboricultural management	High	Minor	Mitigation planting as part of the landscaping scheme for the site.	Medium	Minor	Yes
T7	Horse chestnut	A2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Major	Install tree protection fencing in accordance with BS5837:2012.	Low	Moderate	No
T8	Lawson cypress	C1	Located within the northern region and within interior of site. Isolated from construction activities.	None	None	None	None	None	No
T9	Oak	C1	Located within the north-western corner of the site. Potential impacts from construction activities.	Medium	Minor	Install euro-mesh type fencing as agreed. Site security fencing to offer protection in accordance with BS5837:2012.	Low	Insignificant	No
T10	Oak	B2	Located within the north-western corner of the site. Potential impacts from construction activities. Cable route proposed on edge of RPA.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012. Cale installation to e undertaken in accordance with an approved AMS.	Low	Minor	No
T11	Oak	A2	Located within the western corner of the site. Potential impacts from construction activities.	Medium	Major	Install euro-mesh type fencing as agreed.	Low	Moderate	No
T12	Ash	B2	Located within the western corner of the site. Potential impacts from construction activities.	Medium	Moderate	Install euro-mesh type fencing as agreed.	Low	Minor	No
T13	Oak	B1	Located within the western corner of the site. Potential impacts from construction activities.	Medium	Moderate	Install euro-mesh type fencing as agreed.	Low	Minor	No
T14	Oak		Tree removed since original survey undertaken						
T15	White willow		Tree removed since original survey undertaken						

ARBORICULTURAL IMPACTS SCHEDULE

LITTLE CROW SOLAR PARK, SCUNTHORPE

PROJECT NO: I.291

ARBORICULTURIST: ACU

DATE: NOVEMBER 2019 (Revised 06.08.20)

CLIENT: INRG SOLAR (LITTLE CROW) LTD



No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T16	Oak	A2	Removal required to implement development.	High	Major	Mitigation planting as part of the landscaping scheme for the site.	Medium	Major	Yes
T17	Ash	B1	Located within central section of site. Potential impacts from construction activities.	Medium	Moderate	Install euro-mesh type fencing as agreed.	Low	Minor	No
T18	Sweet chestnut	U	Remove in accordance with good arboricultural management.	Medium	Minor	Mitigation planting as part of the landscaping scheme for the site.	Low	Insignificant	Yes
T19	Scots pine	C1	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Minor	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Low	Insignificant	No
T20	Oak	U	Removal in accordance with good arboricultural management	High	Minor	Mitigation planting as part of the landscaping scheme for the site.	Medium	Minor	Yes
T21	Sycamore	C1	Located adjacent to the north-west corner of the site. Potential for impact during construction phase of the project.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
T22	Goat willow	C1	Located within the western region of the site. Potential impacts from construction activities.	Medium	Minor	Install euro-mesh type fencing as agreed.	Low	Insignificant	No
G1	Hawthorn	C2	Located off-site to the north-west of site.	None	None	None	None	None	No
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	A2	Located off-site to the north-west of site.	None	None	None	None	None	No
G3	Goat willow, Birch, Oak	C2	Located off-site to the north-west of site.	None	None	None	None	None	No
G4	Birch	C2	Located off-site to the north-west of site.	None	None	None	None	None	No
G5	Sycamore, Hawthorn, Elder, Birch	B2	Located off-site to the north-west of site.	None	None	None	None	None	No
G6	Sycamore, Oak, Birch	A2	Located off-site to the north-west of site.	None	None	None	None	None	No
G7	Birch, Oak, Sycamore, Goat willow	A2	Located off-site to the north-west of site.	None	None	None	None	None	No

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G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow.	A2	Located adjacent to the north-west corner of the site. Potential for impact during construction phase of the project.	Low	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Minor	No
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple.	A2	Located off-site to the north. Battery storage are to be located within the southern section. Localised crown lifting and lateral pruning of overhanging trees required	Low	Moderate	Extent of tree pruning to be agreed with project Arboriculturist. All tree work to be carried out in accordance with BS3998:2010. Tree protection fencing in accordance with BS5837:2012.	Slight	Minor	No
G10	Goat Willow, Hawthorn	C2	Located within the northern region and within interior of site. Isolated from construction activities.	Low	Insignificant	Install tree protection fencing in accordance with BS5837:2012.	Slight	Insignificant	No
G11	Ash	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Low	Minor	No
G12	Sycamore	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Low	Minor	No
G13	Hawthorn, Elder	C2	Removal required to implement development	High	Moderate	Mitigation planting as part of the landscaping scheme for the site.	Medium	Minor	Yes
G14	Sycamore, Ash, Elder, Blackthorn.	C2	Located adjacent to the northern boundary of the site. Potential impacts from development.	Low	Insignificant	Install tree protection barrier in accordance with BS5837:2012.	Slight	Insignificant	No
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple.	A2	Located within north-eastern region of the site. Access proposed along existing farm track to the north. Potential impacts from construction vehicles.	Medium	Major	Install tree protection barrier in accordance with BS5837:2012.	Low	Moderate	No
G16	Field maple, Elder, Ash, Blackthorn, Hazel.	C2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012 adjacent to farm track.	Low	Insignificant	No

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G17	Ash	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson.	C2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012.	Low	Insignificant	No
G19	Pine, Sycamore	C2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Minor	Install euro-mesh type fencing as agreed.	Low	Insignificant	No
G20	Lombardy Poplar, Lawson cypress	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Site security fencing to offer protection in accordance with BS5837:2012.	Low	Minor	No
G21	Hawthorn,	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore.	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
G23	Sycamore, Poplar, Hazel	B2	Located within the north-western region of the site. Potential impacts from construction activities.	Medium	Moderate	Install euro-mesh type fencing as agreed. Security fencing to offer protection in accordance with BS5837:2012. Security fence to be installed along northern edge of RPA.	Low	Minor	No
G24	Poplar	C2	Located within the north-western region of the site. Potential impacts from construction activities.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012. Install euro-mesh type fencing as agreed.	Low	Insignificant	No
G25	Hawthorn, Willow, Hazel, Oak	C2	Located within the western region of the site. Potential impacts from construction activities. Trench proposed through RPA.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012. Excavate trench in accordance with an approved AMS.	Low	Insignificant	No
G26	Oak	B2	Located within the north-western region of the site. Potential impacts from construction activities. Trench proposed through RPA.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012. Excavate trench in accordance with an approved AMS.	Low	Minor	No
G27	Ash	C2	Located within the western region of the site. Potential impacts from construction activities.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012.	Low	Insignificant	No

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G28	Ash	B2	Located within the western region of the site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
G29	Hazel, Birch, Goat willow	C2	Located within the western region of the site. Potential impacts from construction activities.	Medium	Minor	Install euro-mesh type fencing as agreed.	Low	Insignificant	No
G30	Lime, Oak	A2	Located within the western region of the site. Potential impacts from construction activities.	Medium	Major	Install euro-mesh type fencing as agreed.	Low	Moderate	No
G31	Hawthorn, Willow	B2	Located within the western region of the site. Potential impacts from construction activities. Partial removal required to install access road.	Medium	Moderate	Install euro-mesh type fencing as agreed.	Low	Minor	Partial
G32	Alder, Goat willow, Birch, Oak, Hawthorn.	C2	Located on the north-western boundary to the site. Potential impacts from construction activities. Sectional removal required to allow security fence to be installed.	Medium	Minor	Install euro-mesh type fencing as agreed. Site security fencing to offer protection in accordance with BS5837:2012. All tree work in accordance with BS3998:2010. Mitigation planting as part of the landscaping scheme for the site.	Low	Insignificant	Partial
G33	Hawthorn	B2	Located within the north-western region of the site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012.	Low	Minor	No
G34	Hawthorn, Elder	C2	Located in south-western region of site. Potential impacts from construction activities. Sectional removal to allow security fence to be installed.	Medium	Minor	Install euro-mesh type fencing as agreed. All tree work to be carried out in accordance with BS3998:2010. Mitigation planting as part of the landscaping scheme for the site.	Low	Insignificant	Partial
G35	Hawthorn, Elder, Willow	B2	Located in south-western region of site. Potential impacts from construction activities. Trench proposed within RPA.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012. Install euro-mesh type fencing as agreed. Excavate trench in accordance with an approved AMS.	Low	Minor	No
G36	Hawthorn, Elder, Willow	C2	Located in south-western region of site. Potential impacts from construction activities. Partial removal required to install access road.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012. Install euro-mesh type fencing as agreed. All tree work to be carried out in accordance with BS3998:2010.	Low	Insignificant	Partial
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet.	B2	Located within central section of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012. All tree work to be carried out in accordance with BS3998:2010.	Low	Minor	No

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G38	Oak, Hawthorn, Rose, Willow	C2	Located within central region. Partial removal required to implement development.	Medium	Minor	Mitigation planting as part of the landscaping scheme for the site. Install euro-mesh type fencing as agreed.	Low	Insignificant	Partial
G39	Blackthorn, Hawthorn	B2	Located within central section of site. Potential impacts from construction activities.	Medium	Moderate	Install euro-mesh type fencing as agreed.	Low	Minor	No
G40	Hazel, Hawthorn Blackthorn	C2	Located within the southern region of the site. Potential impacts from construction activities.	High	Moderate	Install euro-mesh type fencing as agreed. Install tree protection fencing in accordance with BS5837:2012.	Medium	Minor	No
G41	Elder, Hawthorn, Ash	B2	Located within the northern region and within interior of site. Potential impacts from construction activities. Trench proposed within RPA. Partial removal required to install access road.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012. Install euro-mesh type fencing as agreed. Excavate trench in accordance with an approved AMS.	Low	Minor	No
G42	Elder, Blackthorn, Hawthorn	C2	Located within the northern region and within interior of site. Potential impacts from construction activities. Partial removal required.	Medium	Minor	Install euro-mesh type fencing as agreed. All tree work to be carried out in accordance with BS3998:2010.	Low	Insignificant	Partial
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots/Black pine.	A2	Located on the south-eastern corner of the site. Potential impacts from construction activities.	Low	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Minor	No
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	A2	Located within central region of site. Potential impacts from construction activities.	Medium	Major	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Low	Moderate	No
G45	Field maple, Elder	B2	Located within the southern region of the site. Potential impacts from construction activities.	None	None	Install tree protection fencing in accordance with BS5837:2012.	None	None	No
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	A2	Located within the southern region of the site. Potential impacts from construction activities. Trench within RPA.	Medium	Major	Install euro-mesh type fencing as agreed. Site security fencing to offer tree protection in accordance with BS5837:2012. Install tree protection fencing in accordance with BS5837:2012. Excavate trench in accordance with an approved AMS.	Low	Moderate	No
G47	Scots/black Pine, Elder, Sycamore	B2	Located within the southern region of the site. Potential impacts from construction activities.	Low	Minor	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No

ARBORICULTURAL IMPACTS SCHEDULE

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G48	Sycamore, Ash, Black pine, Hawthorn.	A2	Located within the southern region of the site. Potential impacts from construction activities.	Low	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Minor	No
G49	Sweet Chestnut, Ash, Elder	A2	Located within the southern region of the site. Potential impacts from construction activities.	Low	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Minor	No
G50	Elder, Willow	C2	Located within the southern region of the site. Potential impacts from construction activities.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
G51	Oak	B2	Located adjacent to the north-west corner of the site. Potential for impact during construction phase of the project.	Low	Minor	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
G52	Goat willow, Birch, Alder, Grey willow, Blackthorn. Oak, Sycamore.	C2	Located adjacent to the north-west corner of the site. Potential for impact during construction phase of the project.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
G53	Birch, Hawthorn, Oak, Willow	C2	Located within south-western region of site. Potential impact from construction activities.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
G54	Hawthorn, Willow, Sycamore, Elder	C2	Located within south-western region of site. Potential impact from construction activities.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
G55	Hawthorn, Willow, Birch	C2	Located within south-western region of site. Potential impact from construction activities.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No
G56	Hawthorn, Blackthorn	C2	Located within south-western region of site. Potential impact from construction activities.	Low	Insignificant	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Slight	Insignificant	No

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G57	Elder, Willow, Hawthorn	C2	Located within the south-western region of the site. Potential impacts from construction activities. Trench within RPA.	Medium	Minor	Install euro-mesh type fencing as agreed. Excavate trench in accordance with an approved AMS.	Low	Insignificant	No
G58	Sycamore, Elder, Ash	B2	Located within the north-eastern corner of the site. Potential impacts from construction activities.	Medium	Moderate	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Low	Minor	No
H1	Blackthorn, Hawthorn, Ash	C2	Located within the northern region of the site. Potential impacts from construction activities, sectional removal required.	Medium	Minor	Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site. All tree work to be carried out in accordance with BS3998:2010.	Low	Insignificant	Partial
H2	Elder, Sycamore, Hawthorn	C2	Located within the northern region and within interior of site. Potential impacts from construction activities. Trench proposed through RPA. Minor sectional removal required.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012. Install euro-mesh type fencing as agreed. Excavate trench in accordance with an approved AMS. All tree work to be carried out in accordance with BS3998:2010.	Low	Insignificant	Partial
H3	Hawthorn, Elder, Blackthorn, Hazel.	C2	Located within central region off-site. Potential impacts from construction activities. Trench proposed through RPA.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012. Excavate trench in accordance with an approved AMS.	Low	Insignificant	No
H4	Elder, Hawthorn	C2	Located within the northern region and within interior of site. Potential impacts from construction activities. Trench proposed through RPA.	Medium	Minor	Install euro-mesh type fencing as agreed. Excavate trench in accordance with an approved AMS.	Low	Insignificant	No
H5	Ash, Elder Hawthorn	C2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Minor	Install tree protection fencing in accordance with BS5837:2012.	Low	Insignificant	No
H6	Hawthorn, Elder	C2	Located within southern region of site. Potential impacts from construction activities, trench proposed through RPA..	Medium	Minor	Install euro-mesh type fencing as agreed. Excavate trench in accordance with an approved AMS.	Low	Insignificant	No
H7	Hawthorn, Lawson Cypress, Elder, Hazel.	B2	Located within the northern region and within interior of site. Potential impacts from construction activities.	Medium	Moderate	Install tree protection fencing in accordance with BS5837:2012. Site security fencing will offer protection in accordance with BS5837:2012 as long as it is erected before any construction activities take place on site.	Low	Minor	No

ARBORICULTURAL IMPACTS SCHEDULE
LITTLE CROW SOLAR PARK, SCUNTHORPE

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AIA SIGNIFICANCE MATRIX

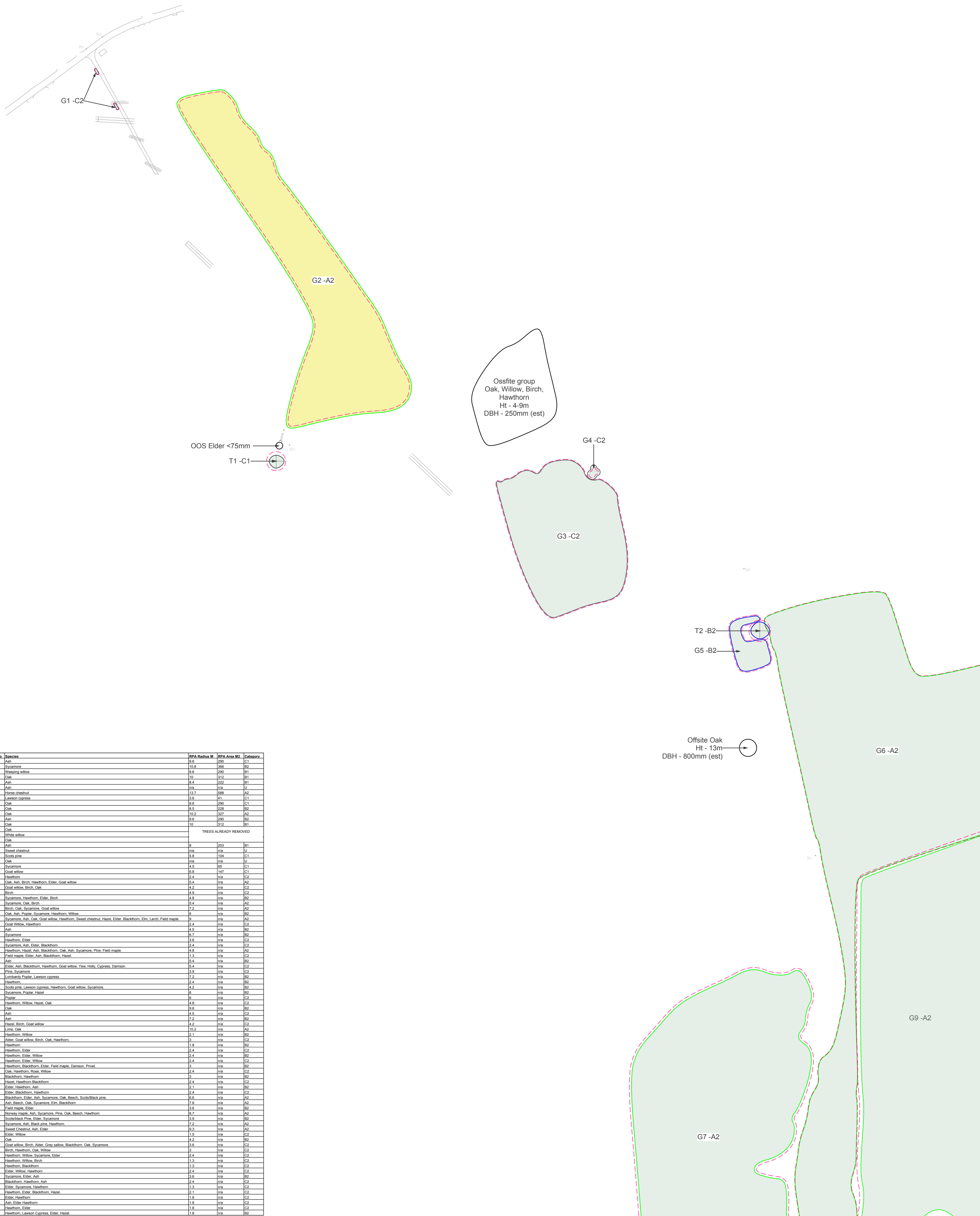
Arboricultural Impact Assessment Significance Matrix								
		Level of Impact						
		High	Medium	Low	Slight	None		
		e.g. removal required to facilitate development. Excessive root severance. Excessive above ground pruning. Hedgerows: >50% loss of overall length.	e.g root damage, soil compaction or above ground impacts tree management works unacceptable in terms of BS3998:2010. Hedgerows: >25% loss of overall length.	e.g. minor fine root loss, installation of no dig surfacing, temporary ground protection. Moderate tree works within the parameters of BS3998:2010. Hedgerows: 5-10% loss of overall length.	e.g.very minor works within root protection areas for example the installation of lightweight fencing or soft landscaping. Hedgerows: <5% loss of overall length.	E.g. trees located at a significant distance from development and construction activities.		
BS5837:2012 Quality Assessment Category	A	Major	Major	Moderate	Minor	None	Significance of effect	
	B	Major	Moderate	Minor	Insignificant	None		
	C	Moderate	Minor	Insignificant	Insignificant	None		
	U	Minor	Minor	Insignificant	Insignificant	None		
		Significance of effect						

SIGNIFICANCE OF EFFECT - DEFINITIONS

Major	Removal/acute damage to structural integrity/vitality/appearance of a high quality arboricultural feature. Depending on circumstances, may result in the loss of all/greater majority of public visual amenity value. Mitigation planting unlikely to be effective except in the long term (40+ years).
Moderate	In the case of damage: unlikely to give rise to tree death but likely to noticeably reduce vitality and deterioration of appearance in the short and medium term, with corresponding a reduction in public visual amenity value where relevant. Tree removals that can be effectively mitigated in the medium term (20-40 years). For example notable crown dieback, foliage discolouration, low leaf density, or tree management works unacceptable in terms of BS3998:2010.
Minor	Short-term damage with limited distribution that can be reasonably compensated for by new growth. Unlikely to result in observable symptoms of damage in relation to structural integrity/vitality/appearance. No obvious impact on public visual amenity. Tree removals that can be mitigated in the short-term (10-20 years)
Insignificant	Minimal damage in very small amounts. No obvious impact on public visual amenity.
None	No impact to above or below ground components of tree reasonably anticipated.

APPENDIX 5

TREE RETENTION AND REMOVAL PLAN



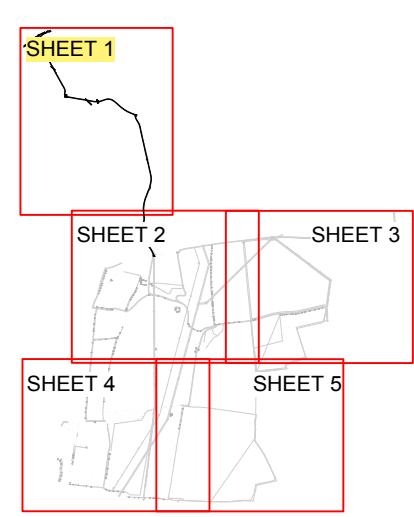
Tree No.	Species	RPA Radius M	RPA Area M ²	Category
T1	Ash	9.8	290	C1
T2	Sycamore	10.8	365	B2
T3	Wetland willow	9.9	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	B1
T6	Ash	10.9	370	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	9.9	290	C1
T10	Oak	8.9	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.9	290	B2
T13	Oak	10	312	B1
T14	Oak			
T15	White willow			
T16	Oak			
T17	Ash	9	283	B1
T18	Sweet chestnut	10.9	370	U
T19	Scots pine	5.8	104	C1
T20	Oak	10.9	370	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	6.8	147	C1
G1	Hawthorn	2.4	19	C2
G2	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	5.4	19	A2
G3	Goat willow, Birch, Oak	4.2	19	C2
G4	Birch	4.9	19	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.9	19	B2
G6	Sycamore, Oak, Birch	5.4	19	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	19	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	19	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9	19	A2
G10	Goat willow, Hawthorn	2.4	19	C2
G11	Ash	4.5	19	B2
G12	Sycamore	6.7	19	B2
G13	Hawthorn, Elder	3.6	19	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	19	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	19	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	19	C2
G17	Ash	5.4	19	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	19	C2
G19	Pine, Sycamore	3.9	19	C2
G20	Lamb's pine, Lawson cypress	7.2	19	B2
G21	Hawthorn	2.4	19	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	19	B2
G23	Sycamore, Poplar, Hazel	6	19	B2
G24	Poplar	6	19	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	19	C2
G26	Oak	9.9	19	B2
G27	Ash	4.5	19	C2
G28	Ash	7.2	19	B2
G29	Hazel, Birch, Goat willow	4.2	19	C2
G30	Lime, Oak	10.2	19	A2
G31	Hawthorn, Willow	2.1	19	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	19	C2
G33	Hawthorn	1.8	19	B2
G34	Hawthorn, Elder	2.4	19	C2
G35	Hawthorn, Elder, Willow	2.4	19	B2
G36	Hawthorn, Elder, Willow	2.4	19	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	19	B2
G38	Oak, Hawthorn, Sycamore, Willow	2.4	19	C2
G39	Blackthorn, Hawthorn	3	19	B2
G40	Hazel, Hawthorn, Blackthorn	2.1	19	B2
G41	Elder, Hawthorn, Ash	2.1	19	C2
G42	Elder, Blackthorn, Hawthorn	2.4	19	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	6.6	19	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	19	A2
G45	Field maple, Elder	3.6	19	B2
G46	Horse chestnut, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	6.7	19	A2
G47	Scots Black pine, Elder, Sycamore	3.9	19	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	19	A2
G49	Sweet chestnut, Ash, Elder	6.3	19	A2
G50	Elder, Willow	1.5	19	C2
G51	Oak	4.2	19	B2
G52	Goat willow, Birch, Alder, Cray willow, Blackthorn, Oak, Sycamore	3.6	19	C2
G53	Birch, Hawthorn, Oak, Willow	3	19	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	19	C2
G55	Hawthorn, Willow, Birch	1.3	19	C2
G56	Hawthorn, Blackthorn	1.3	19	C2
G57	Elder, Willow, Hawthorn	2.4	19	C2
G58	Sycamore, Elder, Ash	3.6	19	B2
G59	Blackthorn, Hawthorn, Ash	2.4	19	C2
G60	Elder, Sycamore, Hawthorn	1.3	19	C2
G61	Hawthorn, Elder, Blackthorn, Hazel	2.1	19	C2
G62	Elder, Hawthorn	1.8	19	C2
G63	Ash, Elder, Hawthorn	1.8	19	C2
G64	Hawthorn, Elder	1.8	19	C2
G65	Hawthorn, Lawson cypress, Elder, Hazel	1.8	19	B2

KEY BS 5837: 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- U Category - Hedgerow, Group, Woodland
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsite Tree / OOS (Out of scope)
- Tree Preservation Order (TPO) High Sanction, Burnt Strip No.1 & No.2 - Order 1985
- Ancient Replanted Woodland
- Tree / Hedgerow to be Removed
- Tree / Hedgerow may need to be Pruned

0 20 40 60 80 100 Meters

GRID NORTH



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (I.2991)

DRAWING TITLE
Tree Retention & Removal Plan

SCALE: 1:2500 @ A2 DRAWING NUMBER: BHA_235_02

DRAWN BY: SD APPROVED BY: RH REVISION: C SHEET: 1/5 DATE: 22/07/2020

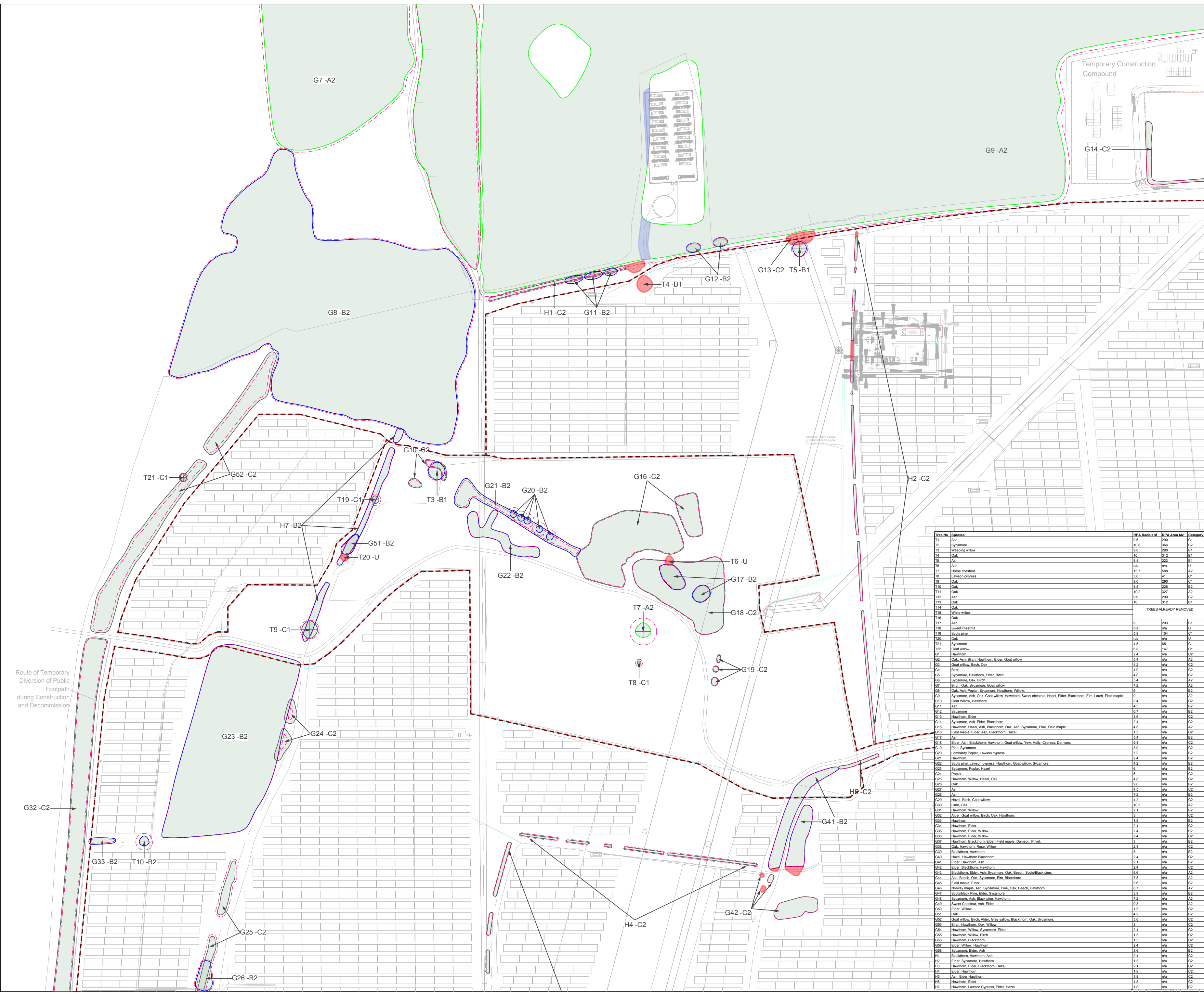
CLIENT: INRG Solar Ltd

COORDINATE SYSTEM / DATUM: British National Grid / Newlyn Datum (AOD)

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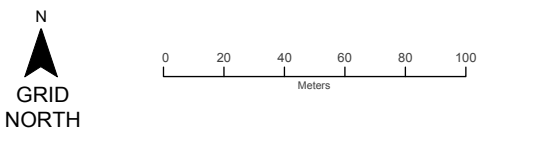
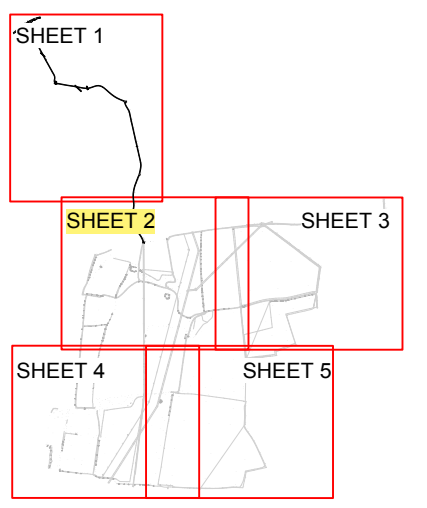
Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN



- KEY** BS 5837 : 2012 Categories
- Tree Category A - High Quality
 - A Category - Hedgerow, Group, Woodland
 - Tree Category B - Moderate Quality
 - B Category - Hedgerow, Group, Woodland
 - Tree Category C - Low Quality
 - C Category - Hedgerow, Group, Woodland
 - Tree Category U - Unsuited for Retention
 - U Category - Hedgerow, Group, Woodland
 - Root Protection Area to BS 5837:2012
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 - Ancient Replanted Woodland
 - Tree / Hedgerow to be Removed
 - Tree / Hedgerow may need to be Pruned

Tree No.	Species	RPA Radius M	RPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.2	346	B1
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	B1
T6	Ash	10.2	346	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	346	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Oak	10	312	B1
T15	White willow	n/a	n/a	n/a
T16	Oak	n/a	n/a	n/a
T17	Ash	9	283	B1
T18	Sweet chestnut	10.2	346	U
T19	Scots pine	5.8	104	C1
T20	Oak	10.2	346	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	47	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	104	A2
G3	Goat willow, Birch, Oak	4.2	78	C2
G4	Birch	4.8	92	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	92	A2
G6	Sycamore, Oak, Birch	5.4	104	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	151	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	9	283	A2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9	283	A2
G10	Goat Willow, Hawthorn	2.4	47	C2
G11	Ash	4.5	65	B2
G12	Sycamore	6.7	125	B2
G13	Hawthorn, Elder	3.6	41	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	47	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	92	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	24	C2
G17	Ash	5.4	104	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	3.9	74	C2
G19	Pine, Sycamore	3.9	74	C2
G20	Lombardy Poplar, Lawson cypress	7.2	151	B2
G21	Hawthorn	2.4	47	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	78	B2
G23	Sycamore, Poplar, Hazel	9	283	B2
G24	Poplar	9	283	B2
G25	Hawthorn, Willow, Hazel, Oak	4.8	92	C2
G26	Oak	9.6	290	B2
G27	Ash	4.5	65	B2
G28	Ash	7.2	151	B2
G29	Hazel, Birch, Goat willow	4.2	78	B2
G30	Lime, Oak	10.2	346	A2
G31	Hawthorn, Willow	3	57	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	57	B2
G33	Hawthorn	1.8	32	B2
G34	Hawthorn, Elder	2.4	47	B2
G35	Hawthorn, Elder, Willow	2.4	47	B2
G36	Hawthorn, Elder, Willow	2.4	47	B2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	57	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	47	B2
G39	Blackthorn, Hawthorn	3	57	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	47	B2
G41	Elder, Hawthorn, Ash	2.1	39	B2
G42	Elder, Blackthorn, Hawthorn	2.4	47	B2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Pine	4.8	92	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	151	A2
G45	Field maple, Elder	3.6	74	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	6.7	125	A2
G47	Scots Pine, Poplar, Elder, Sycamore	3.9	74	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	151	A2
G49	Sweet Chestnut, Ash, Elder	3.9	74	A2
G50	Elder, Willow	1.5	28	B2
G51	Oak	4.2	78	B2
G52	Goat willow, Birch, Alder, Grey willow, Blackthorn, Oak, Sycamore	3.6	74	B2
G53	Birch, Hawthorn, Oak, Willow	3	57	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	47	C2
G55	Hawthorn, Willow, Birch	1.3	24	C2
G56	Hawthorn, Blackthorn	1.3	24	C2
G57	Elder, Willow, Hawthorn	2.4	47	B2
G58	Sycamore, Elder, Ash	1.8	32	B2
G59	Blackthorn, Hawthorn, Ash	2.4	47	B2
G60	Elder, Sycamore, Hawthorn	1.3	24	B2
G61	Hawthorn, Elder, Blackthorn, Hazel	2.1	39	C2
G62	Elder, Hawthorn	1.8	32	C2
G63	Ash, Elder, Hawthorn	1.8	32	C2
G64	Hawthorn, Elder	1.8	32	C2
G65	Hawthorn, Lawson Cypress, Elder, Hazel	1.8	32	B2



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (1.2991)

DRAWING TITLE
Tree Retention & Removal Plan

SCALE 1:2500 @ A2 **DRAWING NUMBER** BHA_235_02

DRAWN BY SD **APPROVED BY** RH **REVISION** C **SHEET** 2/5 **DATE** 22/07/2020

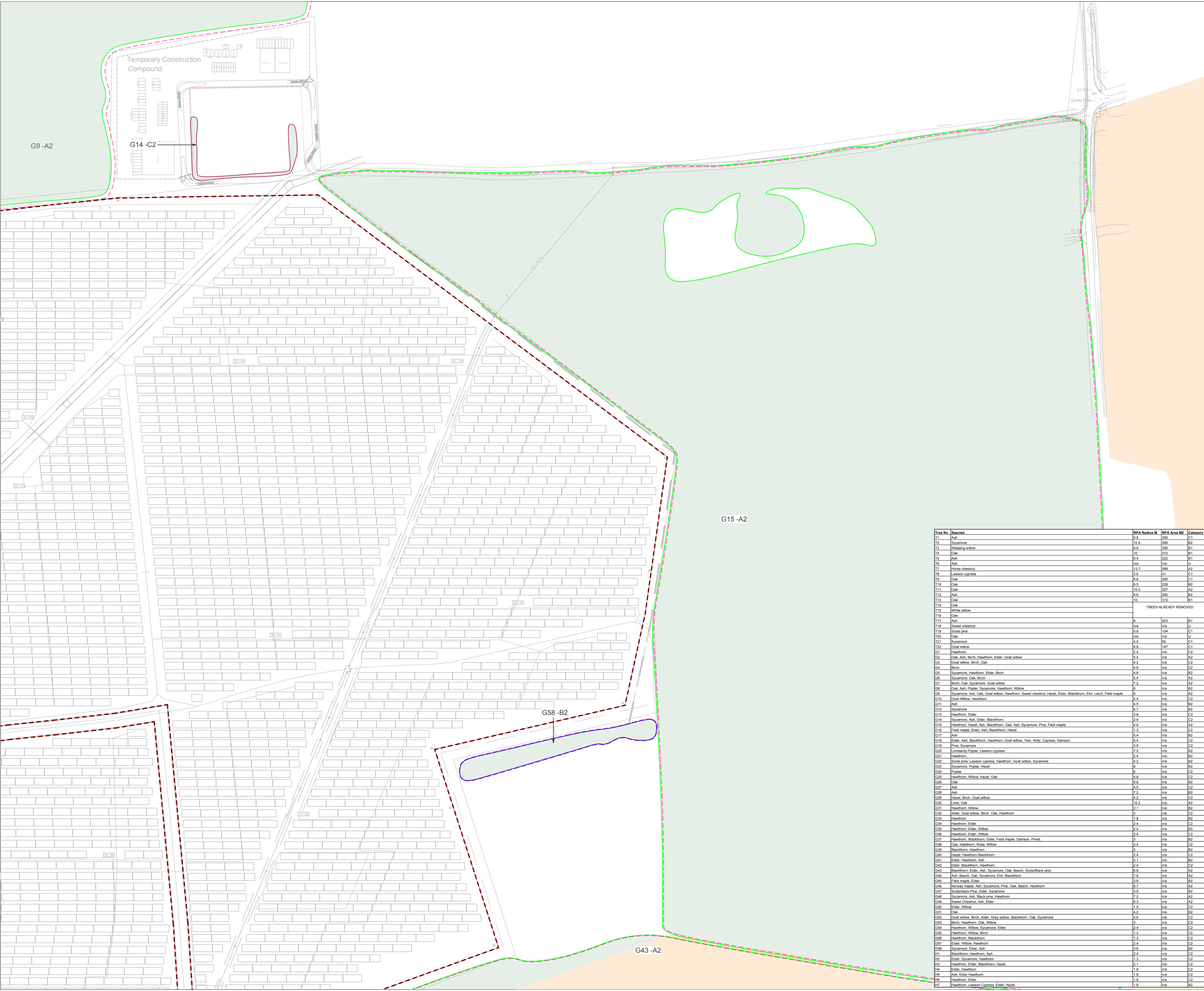
CLIENT INRG Solar Ltd

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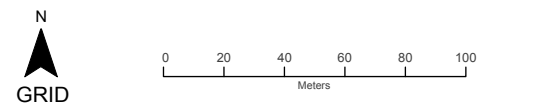
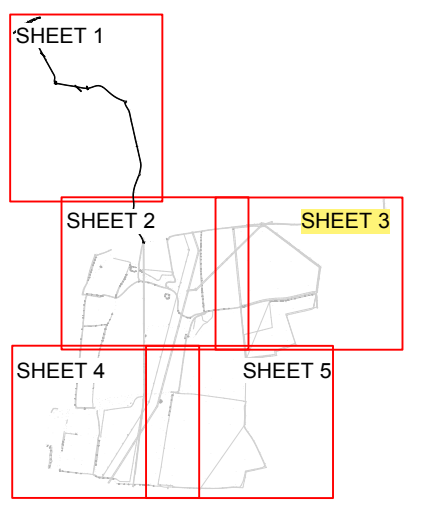
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High Santon, Burnt Strip No.1 & No.2 - Order 1985
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Tree No.	Species	RPA Radius M	RPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.8	366	B2
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	B1
T6	Ash	10.8	366	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Oak			
T15	White willow			
T16	Oak			
T17	Ash	9	283	B1
T18	Sweet chestnut	10.8	366	U
T19	Scots pine	5.8	104	C1
T20	Oak	10.8	366	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	n/a	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	n/a	A2
G3	Goat willow, Birch, Oak	4.2	n/a	C2
G4	Birch	4.8	n/a	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	n/a	A2
G6	Sycamore, Oak, Birch	5.4	n/a	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	n/a	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	n/a	A2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9	n/a	A2
G10	Goat Willow, Hawthorn	2.4	n/a	C2
G11	Ash	4.5	n/a	B2
G12	Sycamore	6.7	n/a	B2
G13	Hawthorn, Elder	3.6	n/a	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	n/a	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	n/a	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	n/a	C2
G17	Ash	5.4	n/a	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	n/a	C2
G19	Pine, Sycamore	3.9	n/a	C2
G20	Lombardy Poplar, Lawson cypress	7.2	n/a	B2
G21	Hawthorn	2.4	n/a	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	n/a	B2
G23	Sycamore, Poplar, Hazel	6	n/a	B2
G24	Poplar	6	n/a	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	n/a	C2
G26	Oak	9.6	n/a	B2
G27	Ash	4.5	n/a	C2
G28	Ash	7.2	n/a	B2
G29	Hazel, Birch, Goat willow	4.2	n/a	C2
G30	Lime, Oak	10.2	n/a	A2
G31	Hawthorn, Willow	2.1	n/a	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	n/a	C2
G33	Hawthorn	1.8	n/a	B2
G34	Hawthorn, Elder	2.4	n/a	C2
G35	Hawthorn, Elder, Willow	2.4	n/a	B2
G36	Hawthorn, Elder, Willow	2.4	n/a	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	n/a	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	n/a	C2
G39	Blackthorn, Hawthorn	3	n/a	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G41	Elder, Hawthorn, Ash	2.1	n/a	B2
G42	Elder, Blackthorn, Hawthorn	2.4	n/a	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	4.8	n/a	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	n/a	A2
G45	Field maple, Elder	3.6	n/a	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	n/a	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	n/a	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	n/a	A2
G49	Sweet Chestnut, Ash, Elder	3.3	n/a	A2
G50	Elder, Willow	1.5	n/a	B2
G51	Oak	4.2	n/a	B2
G52	Goat willow, Birch, Alder, Grey willow, Blackthorn, Oak, Sycamore	1.8	n/a	C2
G53	Birch, Hawthorn, Oak, Willow	3	n/a	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	n/a	C2
G55	Hawthorn, Willow, Birch	1.3	n/a	C2
G56	Hawthorn, Blackthorn	1.3	n/a	C2
G57	Elder, Willow, Hawthorn	2.4	n/a	C2
G58	Sycamore, Elder, Ash	1.8	n/a	B2
H1	Blackthorn, Hawthorn, Ash	2.4	n/a	C2
H2	Elder, Sycamore, Hawthorn	1.3	n/a	C2
H3	Hawthorn, Elder, Blackthorn, Hazel	2.1	n/a	C2
H4	Elder, Hawthorn	1.8	n/a	C2
H5	Ash, Elder, Hawthorn	1.8	n/a	C2
H6	Hawthorn, Elder	1.8	n/a	C2
H7	Hawthorn, Lawson Cypress, Elder, Hazel	1.8	n/a	B2



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (L2991)

DRAWING TITLE
Tree Retention & Removal Plan

SCALE 1:2500 @ A2 **DRAWING NUMBER** BHA_235_02

DRAWN BY SD	APPROVED BY RH	REVISION C	SHEET 3/5	DATE 22/07/2020
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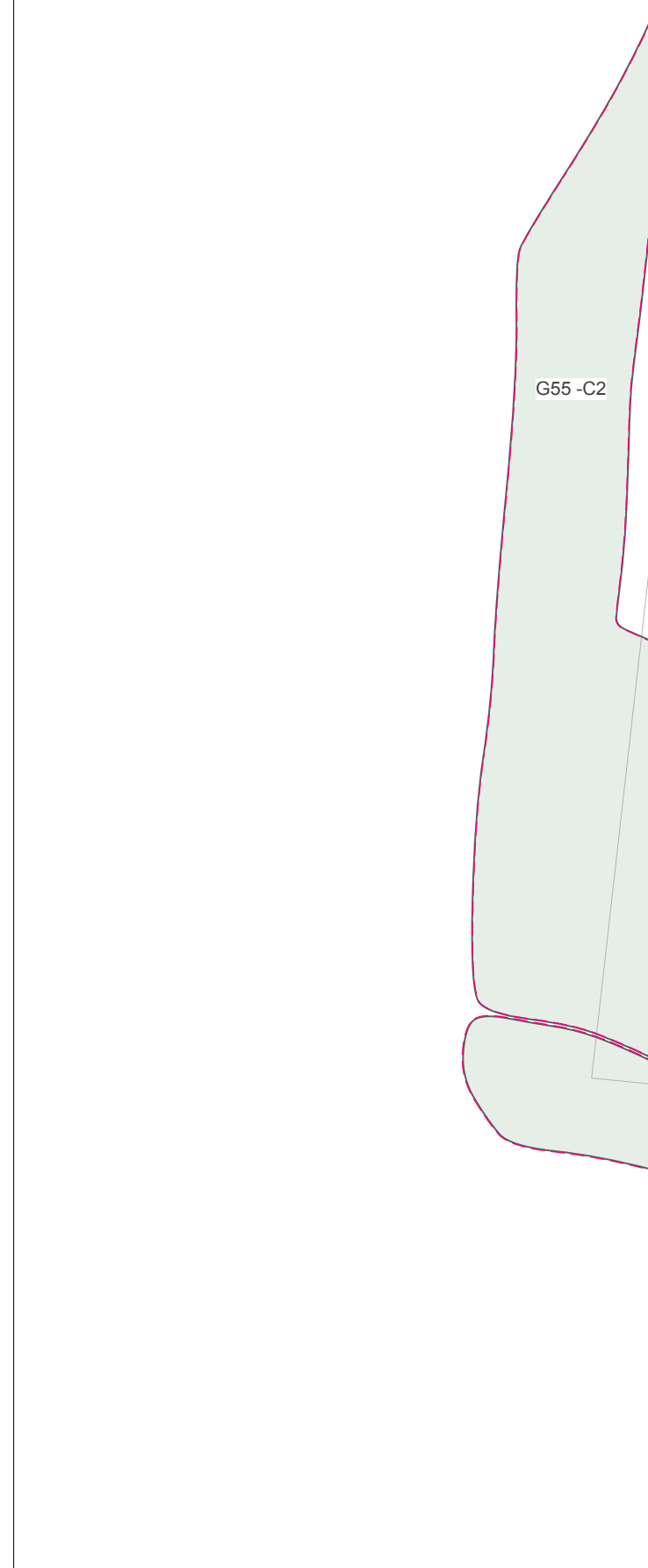
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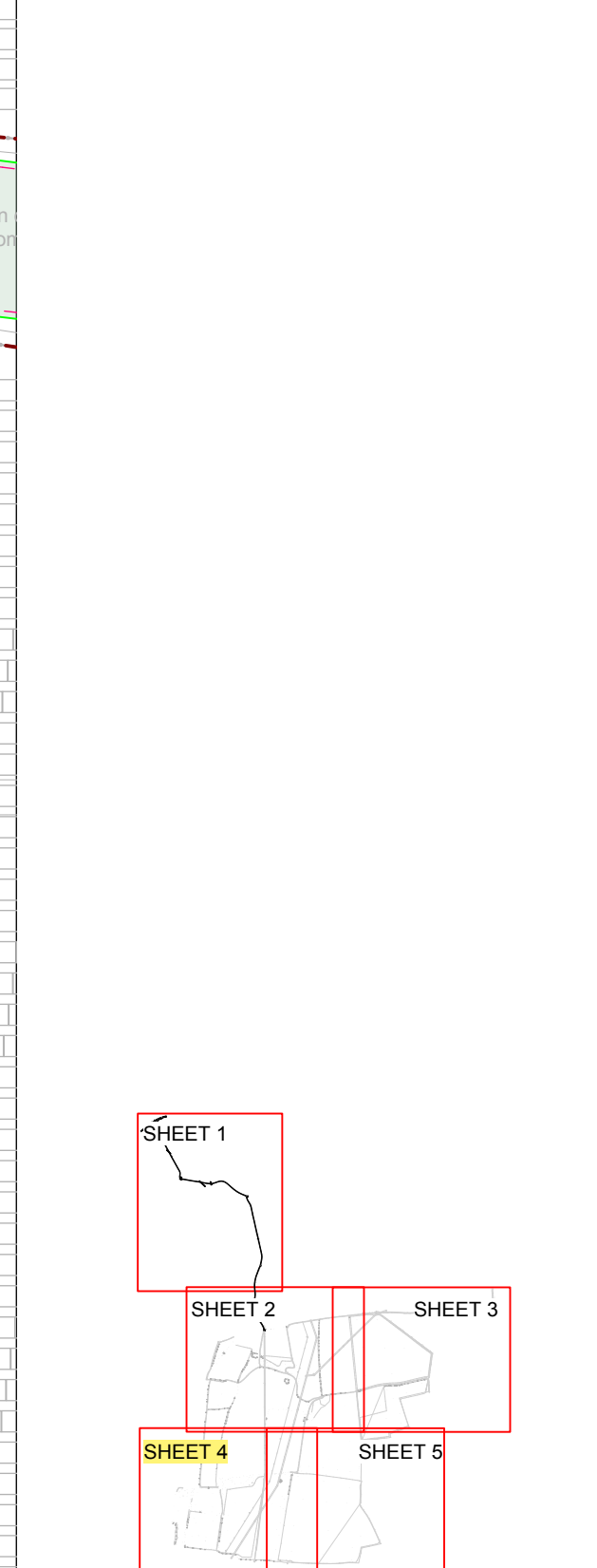
Tree No.	Species	RPA Status M	RPA Area M2	Category
11	Ash	10.0	200	C1
12	Sycamore	10.8	365	B2
13	Willow	11.0	200	C1
14	Oak	10	112	B1
15	Ash	11.4	222	B1
16	Ash	10.9	200	C1
17	Hornbeam	11.7	188	A2
18	Lawned cypress	11.8	41	C1
19	Oak	11.6	200	C1
20	Willow	11.5	200	C1
21	Oak	10.2	207	A2
22	Ash	10.6	200	B2
23	Oak	10	112	B1
24	Willow	11.5	200	C1
25	Oak	11.0	200	C1
26	Willow	11.0	200	C1
27	Willow	11.0	200	C1
28	Willow	11.0	200	C1
29	Willow	11.0	200	C1
30	Willow	11.0	200	C1
31	Willow	11.0	200	C1
32	Willow	11.0	200	C1
33	Willow	11.0	200	C1
34	Willow	11.0	200	C1
35	Willow	11.0	200	C1
36	Willow	11.0	200	C1
37	Willow	11.0	200	C1
38	Willow	11.0	200	C1
39	Willow	11.0	200	C1
40	Willow	11.0	200	C1
41	Willow	11.0	200	C1
42	Willow	11.0	200	C1
43	Willow	11.0	200	C1
44	Willow	11.0	200	C1
45	Willow	11.0	200	C1
46	Willow	11.0	200	C1
47	Willow	11.0	200	C1
48	Willow	11.0	200	C1
49	Willow	11.0	200	C1
50	Willow	11.0	200	C1
51	Willow	11.0	200	C1
52	Willow	11.0	200	C1
53	Willow	11.0	200	C1
54	Willow	11.0	200	C1
55	Willow	11.0	200	C1
56	Willow	11.0	200	C1
57	Willow	11.0	200	C1
58	Willow	11.0	200	C1
59	Willow	11.0	200	C1
60	Willow	11.0	200	C1
61	Willow	11.0	200	C1
62	Willow	11.0	200	C1
63	Willow	11.0	200	C1
64	Willow	11.0	200	C1
65	Willow	11.0	200	C1
66	Willow	11.0	200	C1
67	Willow	11.0	200	C1
68	Willow	11.0	200	C1
69	Willow	11.0	200	C1
70	Willow	11.0	200	C1
71	Willow	11.0	200	C1
72	Willow	11.0	200	C1
73	Willow	11.0	200	C1
74	Willow	11.0	200	C1
75	Willow	11.0	200	C1
76	Willow	11.0	200	C1
77	Willow	11.0	200	C1
78	Willow	11.0	200	C1
79	Willow	11.0	200	C1
80	Willow	11.0	200	C1
81	Willow	11.0	200	C1
82	Willow	11.0	200	C1
83	Willow	11.0	200	C1
84	Willow	11.0	200	C1
85	Willow	11.0	200	C1
86	Willow	11.0	200	C1
87	Willow	11.0	200	C1
88	Willow	11.0	200	C1
89	Willow	11.0	200	C1
90	Willow	11.0	200	C1
91	Willow	11.0	200	C1
92	Willow	11.0	200	C1
93	Willow	11.0	200	C1
94	Willow	11.0	200	C1
95	Willow	11.0	200	C1
96	Willow	11.0	200	C1
97	Willow	11.0	200	C1
98	Willow	11.0	200	C1
99	Willow	11.0	200	C1
100	Willow	11.0	200	C1

TREES ALREADY REMOVED



KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
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- Tree Preservation Order (TPO)
- High Stanton, Burnt Strip No.1 & No.2 - Order 1985
- Ancient Replanted Woodland
- Tree / Hedgerow to be Removed
- Tree / Hedgerow may need to be Pruned



GRID NORTH

PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (L2991)

DRAWING TITLE
Tree Retention & Removal Plan

SCALE
1:2500 @ A2

DRAWING NUMBER
BHA_235_02

DRAWN BY
SD

APPROVED BY
RH

REVISION
C

SHEET
4/5

DATE
22/07/2020

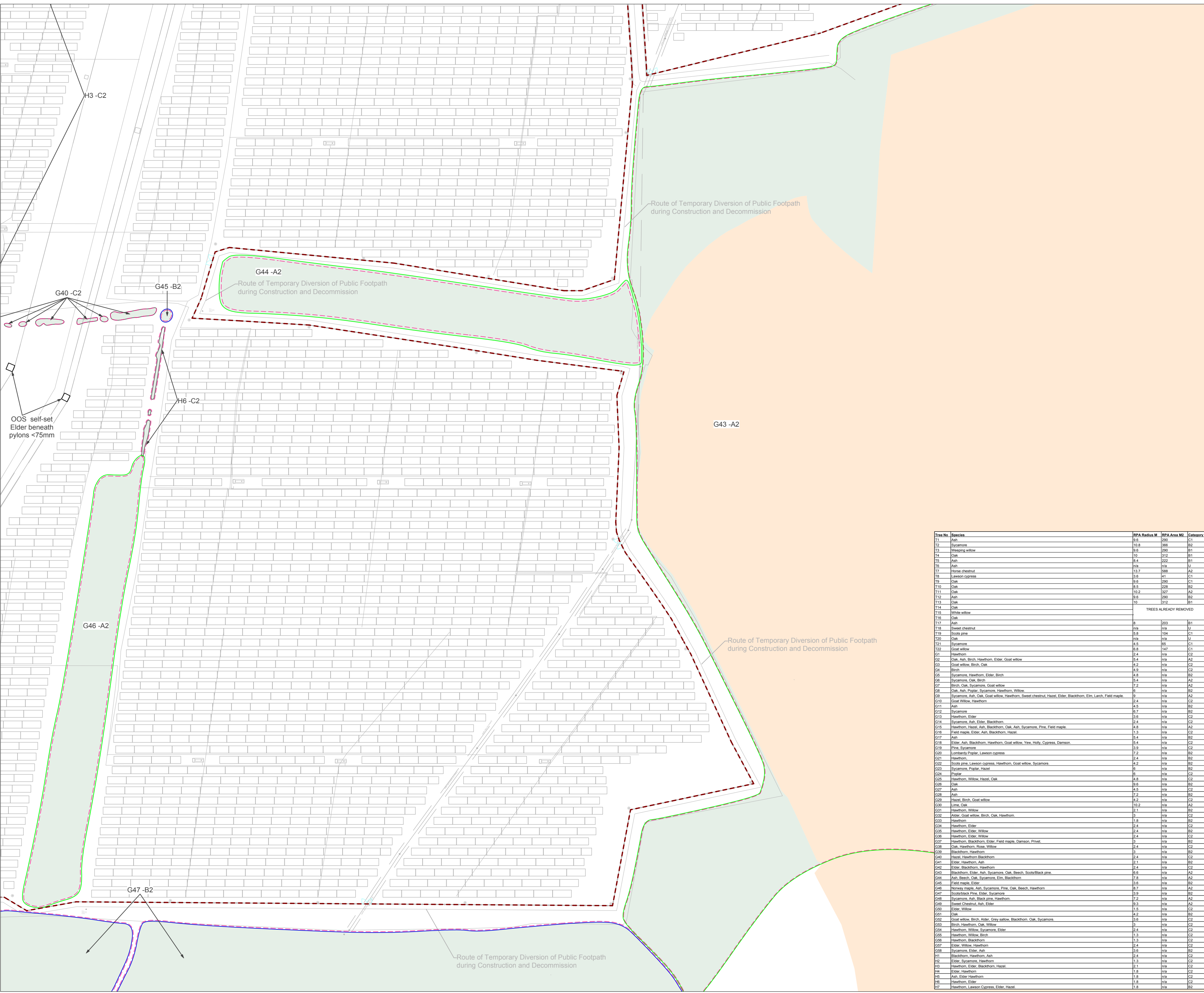
CLIENT
INRG Solar Ltd

COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

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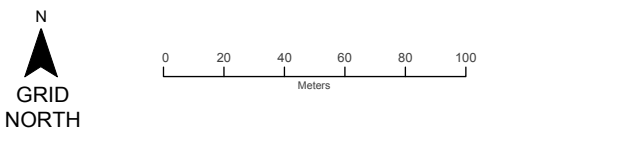
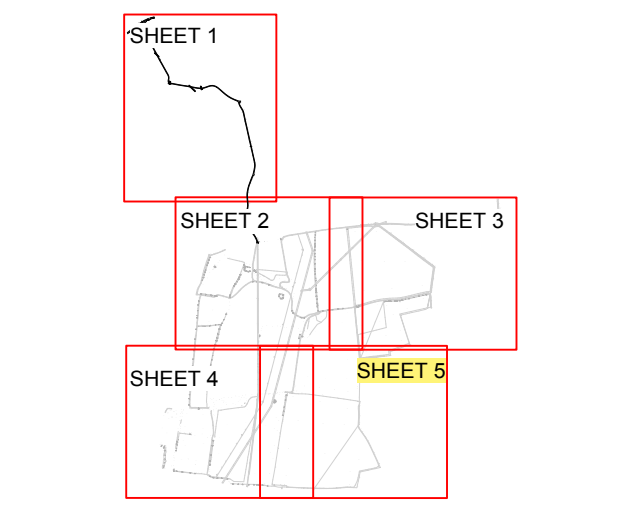
Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN



- KEY** BS 5837 : 2012 Categories
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 - Tree Preservation Order (TPO) High Stanton, Burnt Strip No.1 & No.2 - Order 1985
 - Ancient Replanted Woodland
 - Tree / Hedgerow to be Removed
 - Tree / Hedgerow may need to be Pruned

Tree No.	Species	IRPA Radius M	IRPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.8	366	B2
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	9.4	272	B1
T6	Ash	10.9	370	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	5.6	98	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Oak			
T15	White willow			TREES ALREADY REMOVED
T16	Oak			
T17	Ash	9	283	B1
T18	Sweet chestnut	10.9	366	U
T19	Scots pine	5.8	104	C1
T20	Oak	10.9	366	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	n/a	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	n/a	A2
G3	Goat willow, Birch, Oak	4.2	n/a	C2
G4	Birch	4.8	n/a	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	n/a	B2
G6	Sycamore, Oak, Birch	5.4	n/a	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	n/a	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	9	n/a	A2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9	n/a	A2
G10	Goat willow, Hawthorn	2.4	n/a	C2
G11	Ash	4.5	n/a	B2
G12	Sycamore	6.7	n/a	B2
G13	Hawthorn, Elder	1.8	n/a	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	n/a	A2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	n/a	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	n/a	C2
G17	Ash	5.4	n/a	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	n/a	C2
G19	Pine, Sycamore	3.9	n/a	C2
G20	Lombardy Poplar, Lawson cypress	7.2	n/a	B2
G21	Hawthorn	2.4	n/a	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	n/a	B2
G23	Sycamore, Poplar, Hazel	9	n/a	B2
G24	Poplar	9	n/a	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	n/a	C2
G26	Oak	9.6	n/a	B2
G27	Ash	4.5	n/a	B2
G28	Ash	7.2	n/a	B2
G29	Hazel, Birch, Goat willow	4.2	n/a	C2
G30	Lime, Oak	10.2	n/a	A2
G31	Hawthorn, Willow	2.1	n/a	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	n/a	C2
G33	Hawthorn	1.8	n/a	B2
G34	Hawthorn, Elder	2.4	n/a	C2
G35	Hawthorn, Elder, Willow	2.4	n/a	B2
G36	Hawthorn, Elder, Willow	2.4	n/a	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	n/a	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	n/a	C2
G39	Blackthorn, Hawthorn	3	n/a	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G41	Elder, Hawthorn, Ash	2.1	n/a	B2
G42	Elder, Blackthorn, Hawthorn	2.4	n/a	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	4.8	n/a	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	n/a	A2
G45	Field maple, Elder	3.6	n/a	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	n/a	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	n/a	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	n/a	A2
G49	Sweet Chestnut, Ash, Elder	9.3	n/a	A2
G50	Elder, Willow	1.5	n/a	C2
G51	Oak	4.2	n/a	B2
G52	Goat willow, Birch, Alder, Grey willow, Blackthorn, Oak, Sycamore	1.8	n/a	C2
G53	Birch, Hawthorn, Oak, Willow	3	n/a	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	n/a	C2
G55	Hawthorn, Willow, Birch	1.3	n/a	C2
G56	Hawthorn, Blackthorn	1.3	n/a	C2
G57	Elder, Willow, Hawthorn	2.4	n/a	C2
G58	Sycamore, Elder, Ash	1.8	n/a	B2
H1	Blackthorn, Hawthorn, Ash	2.4	n/a	C2
H2	Elder, Sycamore, Hawthorn	1.3	n/a	C2
H3	Hawthorn, Elder, Blackthorn, Hazel	2.1	n/a	C2
H4	Elder, Hawthorn	1.8	n/a	C2
H5	Ash, Elder, Hawthorn	1.8	n/a	C2
H6	Hawthorn, Elder	1.8	n/a	C2
H7	Hawthorn, Lawson Cypress, Elder, Hazel	1.8	n/a	B2



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (L2991)

DRAWING TITLE
Tree Retention & Removal Plan

SCALE 1:2500 @ A2 **DRAWING NUMBER** BHA_235_02

DRAWN BY SD **APPROVED BY** RH **REVISION** C **SHEET** 5/5 **DATE** 22/07/2020

CLIENT INRG Solar Ltd

COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

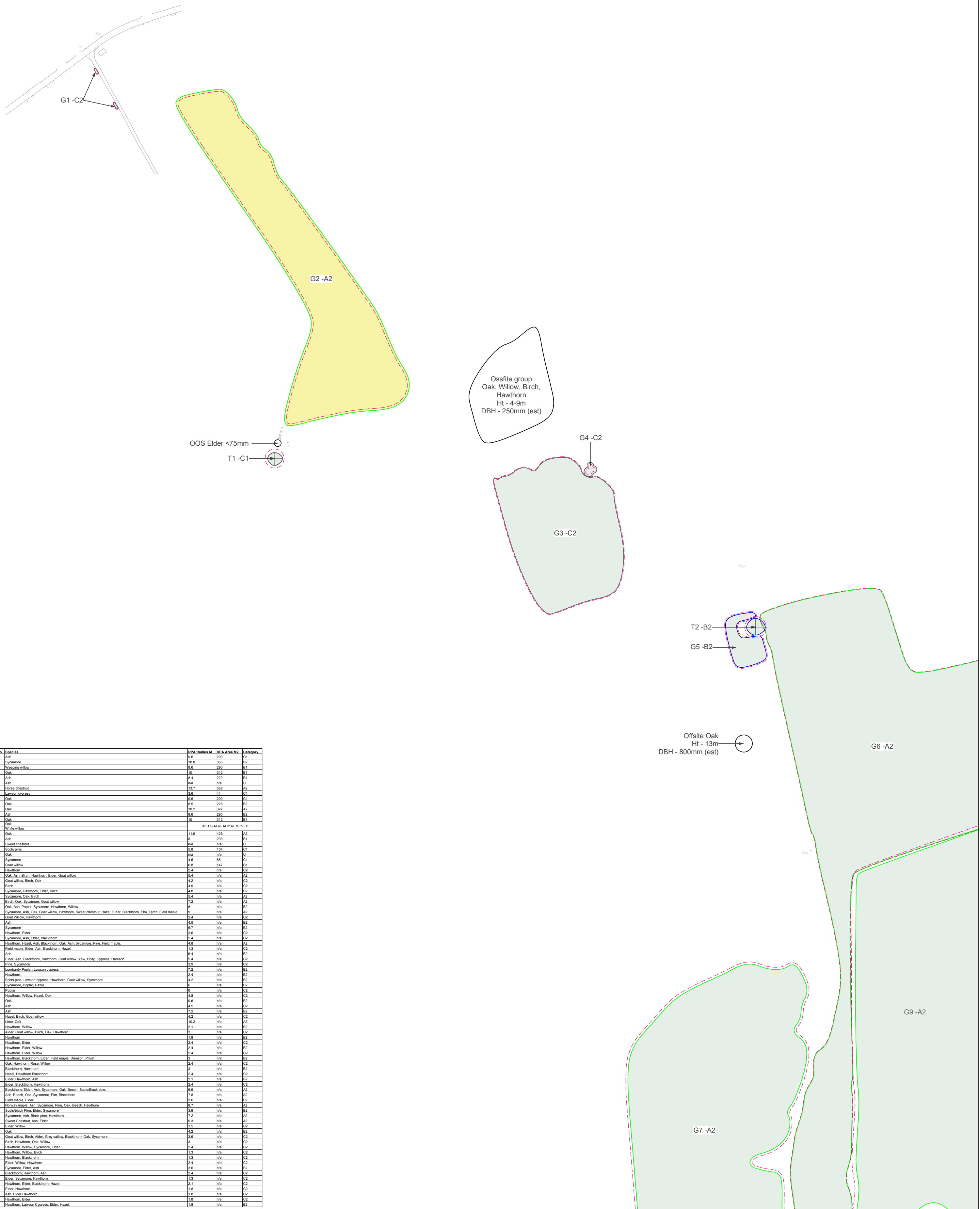
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Barton Hyett Associates
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Eckington, Pershore, Worcestershire, WR10 3DN

APPENDIX 6

TREE PROTECTION PLAN



Tree No.	Species	RPA Radius M	RPA Area M ²	Category
T1	Ash	9.8	290	C1
T2	Sycamore	10.8	365	B2
T3	Weeping willow	9.8	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	B1
T6	Ash	10.8	365	B1
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	3.6	41	C1
T9	Oak	9.8	290	C1
T10	Oak	8.8	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.8	290	B2
T13	Oak	10	312	B1
T14	Oak			
T15	White willow			
T16	Oak	11.8	426	A2
T17	Ash	203	8	B1
T18	Sweet chestnut	10.8	365	U
T19	Scots pine	5.8	104	G1
T20	Oak	10.8	365	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	18	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	10.8	A2
G3	Goat willow, Birch, Oak	4.2	10.8	C2
G4	Birch	4.8	10.8	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	10.8	B2
G6	Sycamore, Oak, Birch	5.4	10.8	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	10.8	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	10.8	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	9	10.8	A2
G10	Goat willow, Hawthorn	2.4	10.8	C2
G11	Ash	4.5	10.8	B2
G12	Sycamore	6.7	10.8	B2
G13	Hawthorn, Elder	3.6	10.8	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	10.8	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	10.8	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	10.8	C2
G17	Ash	5.4	10.8	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	10.8	C2
G19	Pine, Sycamore	3.9	10.8	C2
G20	Lombardy Poplar, Lawson cypress	7.2	10.8	B2
G21	Hawthorn	2.4	10.8	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	10.8	B2
G23	Sycamore, Poplar, Hazel	6	10.8	B2
G24	Poplar	6	10.8	C2
G25	Hawthorn, Willow, Hazel, Oak	4.8	10.8	C2
G26	Oak	9.8	10.8	B2
G27	Ash	4.5	10.8	C2
G28	Ash	7.2	10.8	B2
G29	Hazel, Birch, Goat willow	4.2	10.8	C2
G30	Lime, Oak	10.2	10.8	A2
G31	Hawthorn, Willow	2.1	10.8	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	10.8	C2
G33	Hawthorn	1.8	10.8	B2
G34	Hawthorn, Elder	2.4	10.8	C2
G35	Hawthorn, Elder, Willow	2.4	10.8	B2
G36	Hawthorn, Elder, Willow	2.4	10.8	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	1	10.8	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	10.8	C2
G39	Blackthorn, Hawthorn	3	10.8	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	10.8	C2
G41	Elder, Hawthorn, Ash	2.1	10.8	B2
G42	Elder, Blackthorn, Hawthorn	2.4	10.8	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	6.6	10.8	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	10.8	A2
G45	Field maple, Elder	3.6	10.8	B2
G46	Norway spruce, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	6.7	10.8	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	10.8	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	10.8	A2
G49	Sweet Chestnut, Ash, Elder	9.3	10.8	A2
G50	Elder, Willow	1.5	10.8	C2
G51	Oak	4.2	10.8	B2
G52	Goat willow, Birch, Alder, Grey sallow, Blackthorn, Oak, Sycamore	3.6	10.8	C2
G53	Birch, Hawthorn, Oak, Willow	3	10.8	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	10.8	C2
G55	Hawthorn, Willow, Birch	1.3	10.8	C2
G56	Hawthorn, Blackthorn	1.3	10.8	C2
G57	Elder, Willow, Hawthorn	2.4	10.8	C2
G58	Sycamore, Elder, Ash	3.6	10.8	B2
G59	Blackthorn, Hawthorn, Ash	2.4	10.8	C2
G60	Elder, Sycamore, Hawthorn	1.3	10.8	C2
G61	Hawthorn, Elder, Blackthorn, Hazel	2.1	10.8	C2
G62	Elder, Hawthorn	1.8	10.8	C2
G63	Hawthorn, Elder	1.8	10.8	C2
G64	Ash, Elder, Hawthorn	1.8	10.8	C2
G65	Hawthorn, Elder	1.8	10.8	C2
G66	Hawthorn, Lawson cypress, Elder, Hazel	1.8	10.8	B2

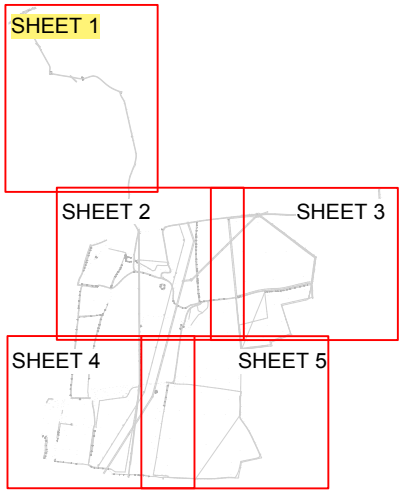
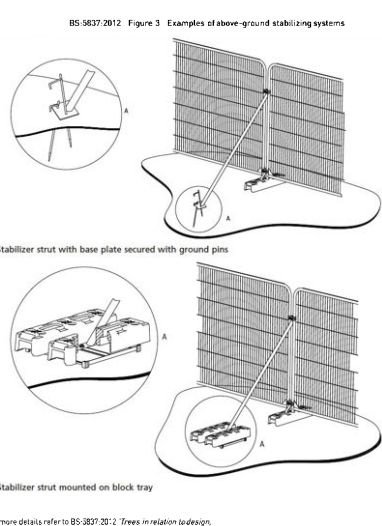
KEY BS 5837: 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
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- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
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- U Category - Hedgerow, Group, Woodland
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- Tree Preservation Order (TPO) / High Sanction, Burnt Strip No.1 & No.2 - Order 1985
- Ancient Replanted Woodland
- Tree Protection Barrier to BS 5837:2012
- Down-graded 'Euro-Mesh' type fencing - to be agreed with LPA
- Site Security Fencing - to offer tree protection in accordance with BS 5837:2012
- Trench for Cable Installation - see AIA

0 20 40 60 80 100 Meters

GRID NORTH

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross check with specific requirements of any relevant planning conditions)



PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (I.2991)

DRAWING TITLE
Tree Protection Plan

SCALE: **1:2500 @ A2** DRAWING NUMBER: **BHA_235_03**

DRAWN BY: **SD** APPROVED BY: **RH** REVISION: **D** SHEET: **1/5** DATE: **19/10/2020**

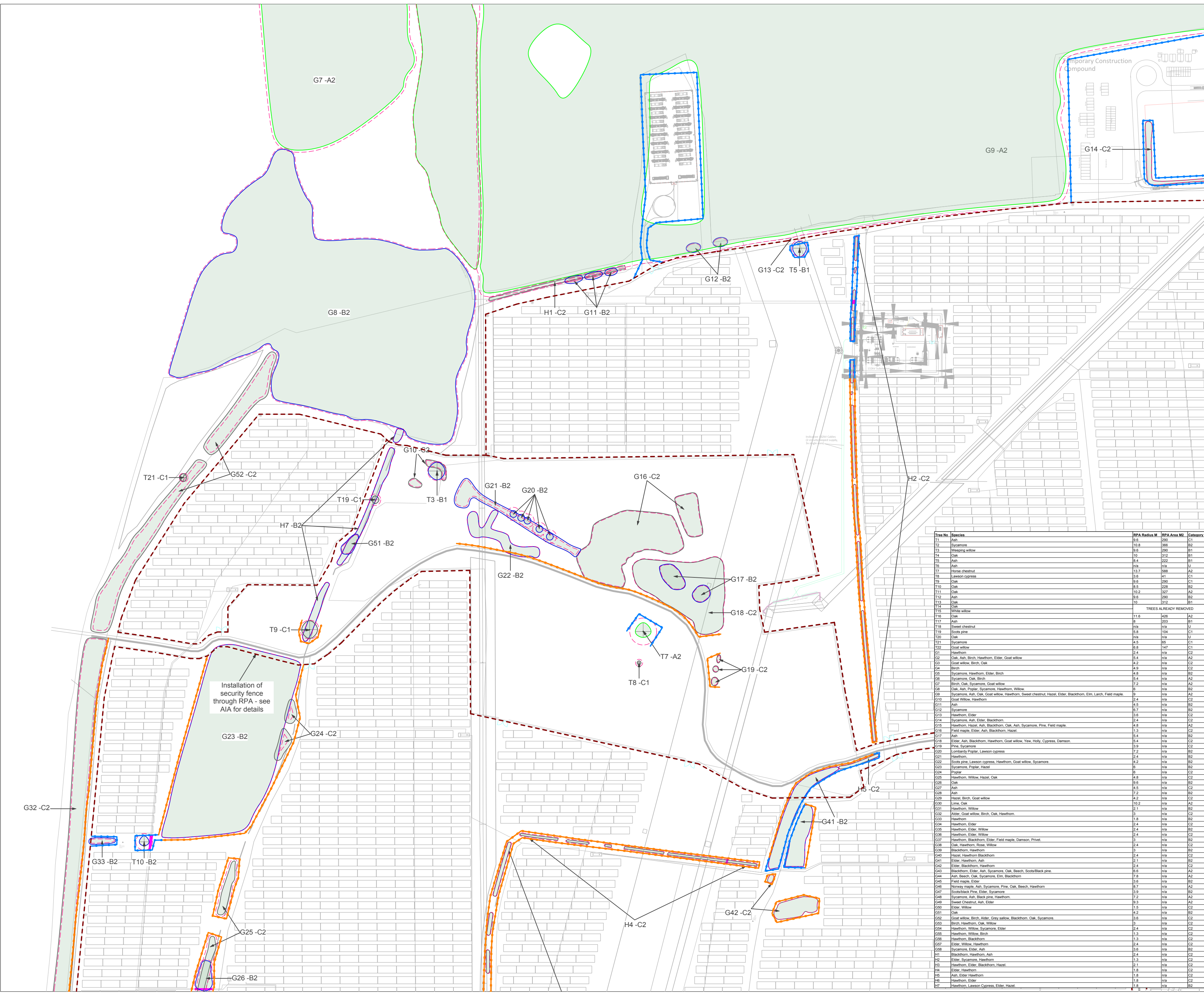
CLIENT: **INRG Solar Ltd**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

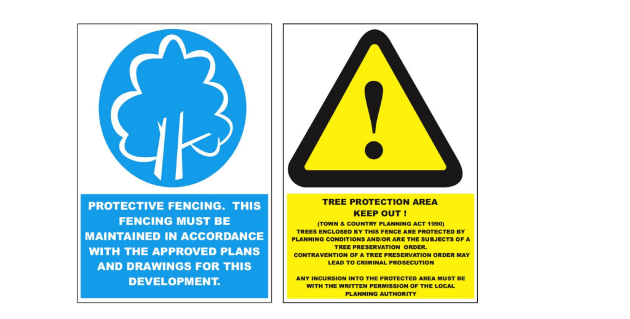
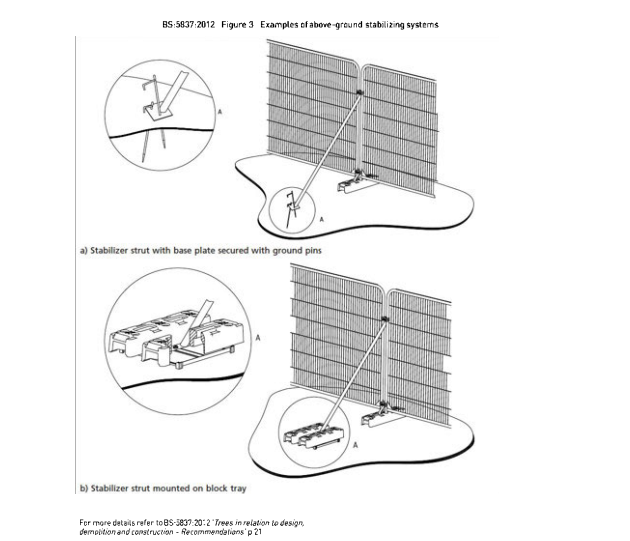
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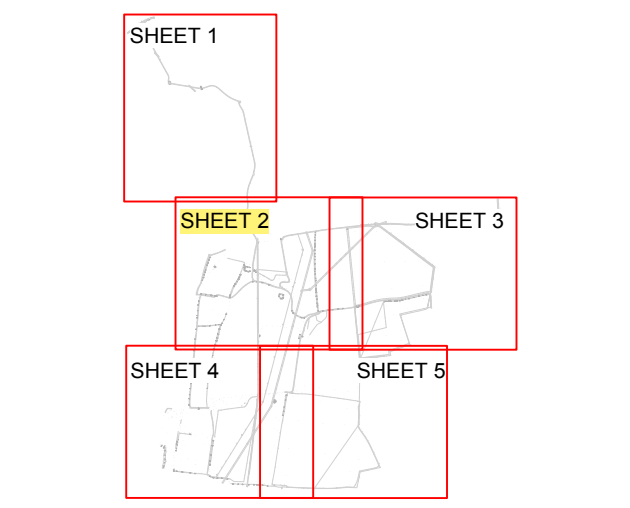
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Tree No.	Species	RPA Radius M	RPA Area M2	Category
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T6	Ash	10.8	366	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	6.1	117	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Oak	10	312	B1
T15	White willow	11.6	426	A2
T16	Oak	8	203	B1
T17	Ash	8	203	B1
T18	Sweet chestnut	n/a	n/a	U
T19	Scotts pine	5.8	104	C1
T20	Oak	n/a	n/a	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	n/a	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	n/a	A2
G3	Goat willow, Birch, Oak	4.2	n/a	C2
G4	Birch	4.9	n/a	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	n/a	B2
G6	Sycamore, Oak, Birch	5.4	n/a	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	n/a	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	n/a	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	2.4	n/a	C2
G10	Goat Willow, Hawthorn	2.4	n/a	C2
G11	Ash	4.5	n/a	B2
G12	Sycamore	8.7	n/a	B2
G13	Hawthorn	3.6	n/a	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	n/a	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	1.3	n/a	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	n/a	A2
G17	Ash	5.4	n/a	C2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	n/a	C2
G19	Pine, Sycamore	3.9	n/a	C2
G20	Lombardy Poplar, Lawson cypress	7.2	n/a	B2
G21	Hawthorn	2.4	n/a	B2
G22	Scotts pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	n/a	B2
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G24	Poplar	6	n/a	B2
G25	Hawthorn, Willow, Hazel, Oak	4.8	n/a	C2
G26	Oak	9.6	n/a	B2
G27	Ash	4.5	n/a	C2
G28	Ash	7.2	n/a	B2
G29	Hazel, Birch, Goat willow	4.2	n/a	C2
G30	Lime, Oak	10.2	n/a	A2
G31	Hawthorn	2.1	n/a	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	n/a	C2
G33	Hawthorn	1.8	n/a	B2
G34	Hawthorn	2.4	n/a	C2
G35	Hawthorn, Elder, Willow	2.4	n/a	B2
G36	Hawthorn, Elder, Willow	2.4	n/a	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	2.4	n/a	C2
G38	Oak, Hawthorn, Rose, Willow	2.4	n/a	B2
G39	Blackthorn, Hawthorn	2.4	n/a	C2
G40	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G41	Elder, Hawthorn, Ash	2.1	n/a	B2
G42	Elder, Blackthorn, Hawthorn	2.4	n/a	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	6.6	n/a	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	n/a	A2
G45	Field maple, Elder	5.8	n/a	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	n/a	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	n/a	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	n/a	A2
G49	Sweet Chestnut, Ash, Elder	9.3	n/a	A2
G50	Elder, Willow	1.5	n/a	C2
G51	Oak	4.2	n/a	C2
G52	Goat willow, Birch, Alder, Grey willow, Blackthorn, Oak, Sycamore	3.6	n/a	C2
G53	Birch, Hawthorn, Oak, Willow	3	n/a	C2
G54	Hawthorn, Willow, Sycamore, Elder	1.3	n/a	C2
G55	Hawthorn	1.3	n/a	C2
G56	Hawthorn, Blackthorn	1.3	n/a	C2
G57	Elder, Willow, Hawthorn	3.6	n/a	B2
G58	Sycamore, Elder, Ash	3.6	n/a	B2
G59	Blackthorn, Hawthorn, Ash	1.3	n/a	C2
G60	Elder, Sycamore, Hawthorn	1.3	n/a	C2
G61	Hawthorn, Elder, Blackthorn, Hazel	2.1	n/a	C2
G62	Elder, Hawthorn	1.8	n/a	C2
G63	Ash, Elder, Hawthorn	1.8	n/a	C2
G64	Hawthorn, Elder	1.8	n/a	C2
G65	Hawthorn, Lawson Cypress, Elder, Hazel	1.8	n/a	B2

GRID NORTH

0 20 40 60 80 100 Meters

PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (1.2991)

DRAWING TITLE
Tree Protection Plan

SCALE 1:2500 @ A2 **DRAWING NUMBER** BHA_235_03

DRAWN BY SD **APPROVED BY** RH **REVISION** D **SHEET** 2/5 **DATE** 19/10/2020

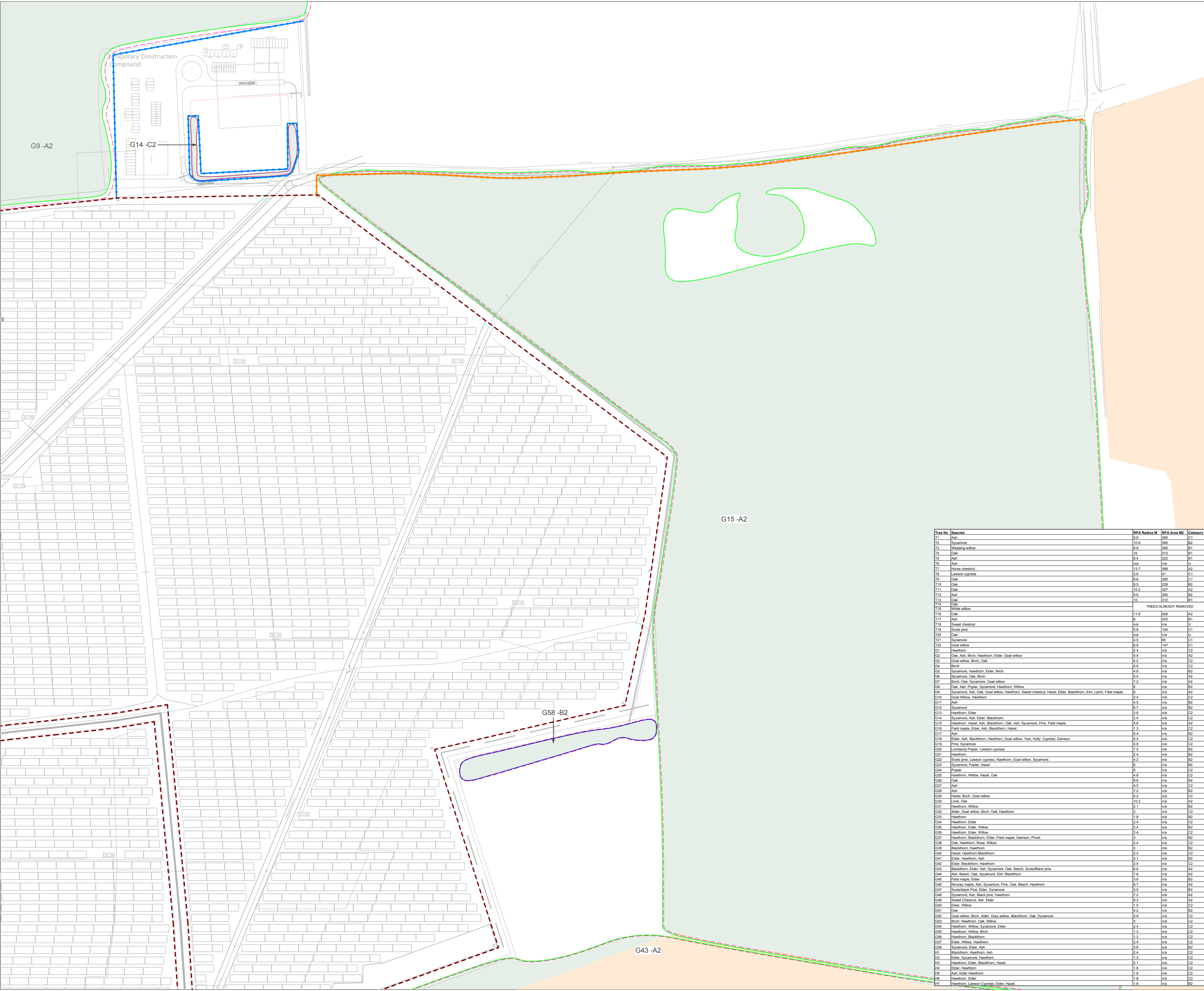
CLIENT INRG Solar Ltd

COORDINATE SYSTEM / DATUM British National Grid / Newlyn Datum (AOD)

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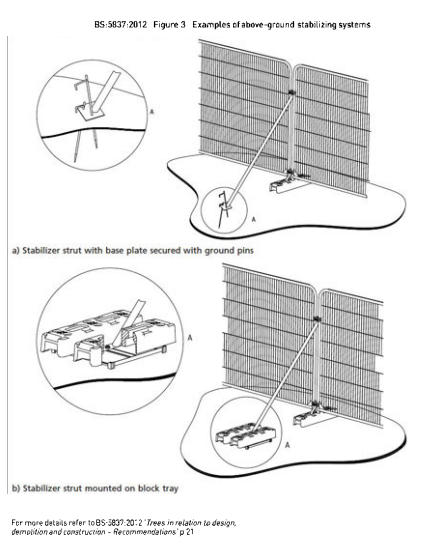
Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN

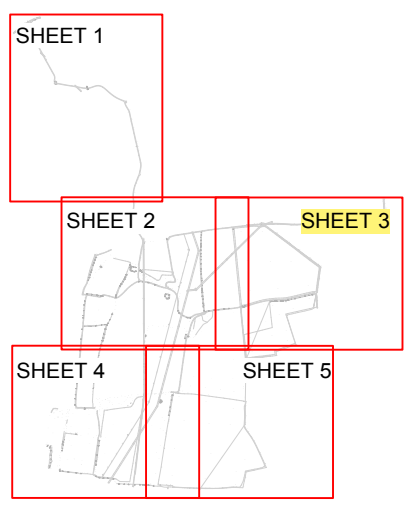


KEY BS 5837: 2012 Categories

- + Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- + Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- + Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- + Tree Category U - Unsuitable for Retention
- U Category - Hedgerow, Group, Woodland
- Root Protection Area to BS 5837:2012
- Shrub Mass / Off-site Tree / DOS (Out of scope)
- Tree Preservation Order (TPO) High Stanton, Burnt Strip No. 1 & No. 2 - Order 1985
- Ancient Replanted Woodland
- Tree Protection Barrier to BS 5837:2012
- Down-graded 'Euro-Mesh' type fencing - to be agreed with LPA
- Site Security Fencing - to offer tree protection in accordance with BS 5837:2012
- Trench for Cable Installation - see AIA



Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross check with specific requirements of any relevant planning conditions)



Tree No.	Species	RPA Radius M	RPA Area M2	Category
T1	Ash	9.6	290	C1
T2	Sycamore	10.8	366	B2
T3	Weeping willow	9.6	290	B1
T4	Oak	10	312	B1
T5	Ash	8.4	222	B1
T6	Ash	10.8	366	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	5.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Oak	9.6	290	B1
T15	White willow	11.6	426	A2
T16	Oak	8	203	B1
T17	Ash	8	203	B1
T18	Sweet chestnut	n/a	n/a	U
T19	Scots pine	5.6	104	C1
T20	Oak	n/a	n/a	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	6.8	147	C1
G1	Hawthorn	2.4	n/a	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	n/a	A2
G3	Goat willow, Birch, Oak	4.2	n/a	C2
G4	Birch	4.8	n/a	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	n/a	B2
G6	Sycamore, Oak, Birch	5.4	n/a	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	n/a	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	n/a	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	6	n/a	A2
G10	Goat willow, Hawthorn	2.4	n/a	C2
G11	Ash	4.5	n/a	B2
G12	Sycamore	6.7	n/a	B2
G13	Hawthorn, Elder	3.6	n/a	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	n/a	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	n/a	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	n/a	C2
G17	Ash	5.4	n/a	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	n/a	C2
G19	Pine, Sycamore	3.9	n/a	C2
G20	Lombardy Poplar, Lawson cypress	7.2	n/a	B2
G21	Hawthorn	2.4	n/a	B2
G22	Scots pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	n/a	B2
G23	Sycamore, Poplar, Hazel	6	n/a	B2
G24	Poplar	6	n/a	B2
G25	Hawthorn, Willow, Birch, Oak	4.8	n/a	C2
G26	Oak	9.6	n/a	B2
G27	Ash	4.5	n/a	B2
G28	Ash	7.2	n/a	B2
G29	Hazel, Birch, Goat willow	4.2	n/a	C2
G30	Lime, Oak	10.2	n/a	A2
G31	Hawthorn, Willow	2.1	n/a	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	n/a	C2
G33	Hawthorn	1.8	n/a	B2
G34	Hawthorn, Elder	2.4	n/a	C2
G35	Hawthorn, Elder, Willow	2.4	n/a	B2
G36	Hawthorn, Elder, Willow	2.4	n/a	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	n/a	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	n/a	B2
G39	Blackthorn, Hawthorn	5	n/a	B2
G40	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G41	Elder, Hawthorn, Ash	2.1	n/a	B2
G42	Elder, Blackthorn, Hawthorn	2.4	n/a	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Black pine	6.6	n/a	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	n/a	A2
G45	Field maple, Elder	5.8	n/a	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	n/a	A2
G47	Scots Black Pine, Elder, Sycamore	3.9	n/a	B2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	n/a	A2
G49	Sweet Chestnut, Ash, Elder	9.3	n/a	A2
G50	Elder, Willow	1.5	n/a	C2
G51	Oak	4.2	n/a	C2
G52	Goat willow, Birch, Alder, Grey sallow, Blackthorn, Oak, Sycamore	4.8	n/a	B2
G53	Birch, Hawthorn, Oak, Willow	3	n/a	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	n/a	C2
G55	Hawthorn, Willow, Birch	1.3	n/a	C2
G56	Hawthorn, Blackthorn	1.3	n/a	C2
G57	Elder, Willow, Hawthorn	2.4	n/a	C2
G58	Sycamore, Elder, Ash	3.6	n/a	B2
H1	Blackthorn, Hawthorn, Ash	2.4	n/a	C2
H2	Elder, Sycamore, Hawthorn	1.3	n/a	C2
H3	Hawthorn, Elder, Blackthorn, Hazel	2.1	n/a	C2
H4	Elder, Hawthorn	1.8	n/a	C2
H5	Ash, Elder, Hawthorn	1.8	n/a	C2
H6	Hawthorn, Elder	1.8	n/a	C2
H7	Hawthorn, Lawson Cypress, Elder, Hazel	1.8	n/a	B2

GRID NORTH

0 20 40 60 80 100 Meters

PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (L2991)

DRAWING TITLE
Tree Protection Plan

SCALE: **1:2500 @ A2** DRAWING NUMBER: **BHA_235_03**

DRAWN BY: **SD** APPROVED BY: **RH** REVISION: **D** SHEET: **3/5** DATE: **19/10/2020**

CLIENT: **INRG Solar Ltd**

COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

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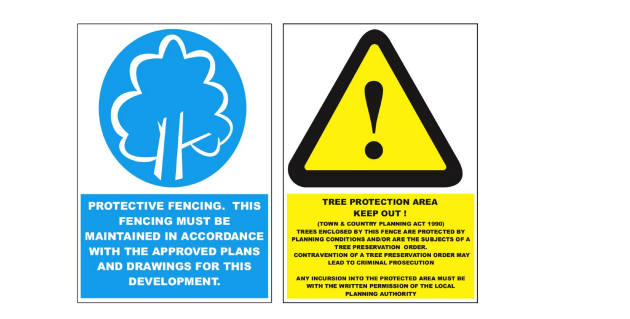
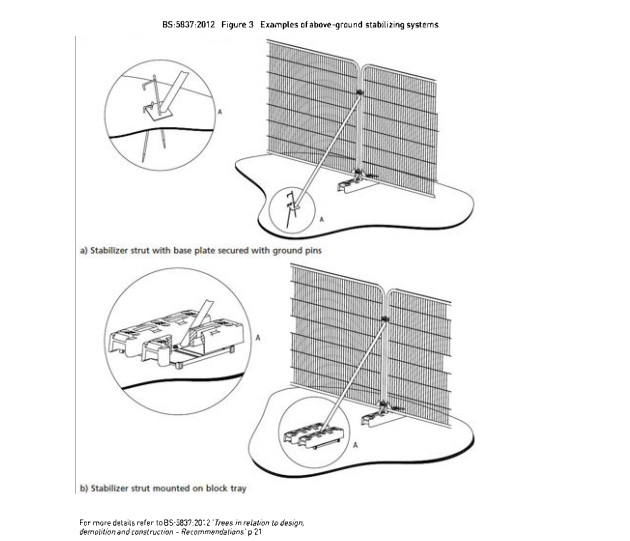
Barton Hyett Associates
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Tel: 01386 578161
Address: Office 5E, Deer Park Business Centre,
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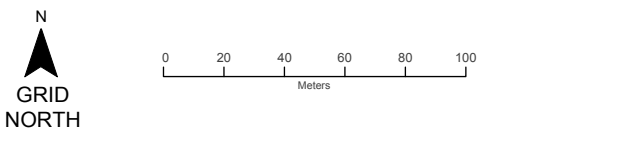
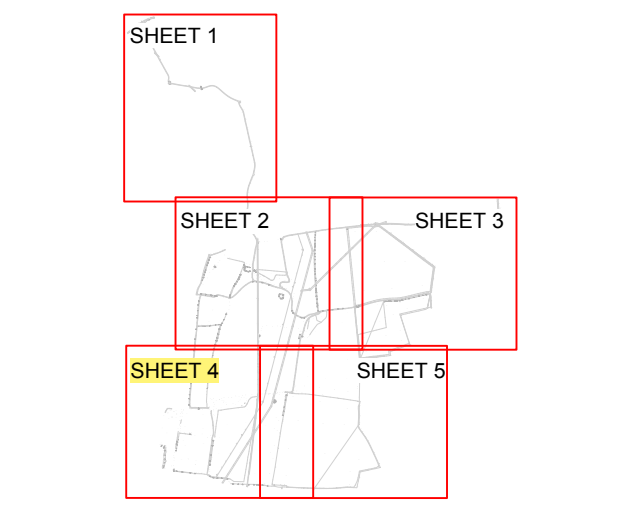
Tree No	Species	RPA Area M	RPA Area M2	Category
11	Ash	9.0	200	C1
12	Sycamore	10.8	365	B2
13	Downy birch	9.6	200	B1
14	Oak	10	112	B1
15	Ash	8.4	222	B1
16	Ash	9.9	109	U
17	Horse chestnut	13.7	188	A2
18	Lemon cypress	9.6	41	C1
19	Oak	9.6	200	C1
20	Oak	9.6	200	B2
21	Oak	10.2	107	A2
22	Ash	9.6	200	B2
23	Oak	9	112	B1
24	Oak	11.6	426	A2
25	Oak	9	200	B1
26	Ash	9.9	109	U
27	Downy birch	9.6	104	U
28	Oak	9.9	109	U
29	Oak	9.9	109	U
30	Sycamore	8.5	105	C1
31	Oak	9.9	147	C1
32	Hawthorn	2.4	104	C2
33	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	9.4	104	A2
34	Goat willow, Birch, Oak	4.2	104	C2
35	Ash	9.9	109	B2
36	Sycamore, Hawthorn, Elder, Birch	8.8	104	B2
37	Sycamore, Oak, Birch	2.4	104	A2
38	Birch, Oak, Sycamore, Goat willow	7.2	104	A2
39	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	104	B2
40	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Lamb, Field maple	9	104	A2
41	Goat willow, Hawthorn	2.4	104	C2
42	Ash	8.5	104	B2
43	Sycamore	9.7	104	B2
44	Hawthorn, Elder	2.6	104	C2
45	Sycamore, Ash, Elder, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	2.4	104	C2
46	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	104	A2
47	Field maple, Elder, Ash, Blackthorn, Hazel	9.3	104	B2
48	Ash	5.4	104	B2
49	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Vine, Holly, Cypress, Damson	5.4	104	C2
50	Pine, Sycamore	9.9	104	C2
51	Scrubby Poplar, Lawson cypress	7.2	104	B2
52	Hawthorn	2.4	104	B2
53	Scrub pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	104	B2
54	Sycamore, Poplar, Hazel	6	104	C2
55	Poplar	6	104	C2
56	Hawthorn, Willow, Hazel, Oak	4.8	104	C2
57	Oak	9.6	104	B2
58	Ash	8.5	104	C2
59	Ash	7.2	104	C2
60	Hazel, Birch, Goat willow	4.2	104	C2
61	Pine, Oak	10.2	104	A2
62	Hawthorn, Willow	2.1	104	B2
63	Alder, Goat willow, Birch, Oak, Hawthorn	3	104	C2
64	Hawthorn	1.8	104	B2
65	Hawthorn, Elder	2.4	104	C2
66	Hawthorn, Elder, Willow	2.4	104	B2
67	Hawthorn, Elder, Willow	2.4	104	C2
68	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	2.4	104	C2
69	Oak, Hawthorn, Elder, Willow	2.4	104	C2
70	Blackthorn, Ash	2.1	104	B2
71	Hazel, Hawthorn, Blackthorn	2.4	104	C2
72	Elder, Hawthorn, Ash	2.1	104	B2
73	Elder, Blackthorn, Hawthorn	2.4	104	C2
74	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots Pine	1.8	104	A2
75	Ash, Birch, Oak, Sycamore, Elm, Blackthorn	9.6	104	A2
76	Field maple, Elder	2.4	104	C2
77	Rowan, Maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	104	A2
78	Scots Pine, Elder, Sycamore	1.9	104	B2
79	Sycamore, Ash, Black pine, Hawthorn	7.2	104	A2
80	Sweet Chestnut, Ash, Elder	1.3	104	A2
81	Elder, Willow	1.5	104	C2
82	Oak	4.2	104	B2
83	Goat willow, Birch, Alder, Grey willow, Blackthorn, Oak, Sycamore	9.6	104	C2
84	Birch, Hawthorn, Oak, Willow	3	104	C2
85	Hawthorn, Willow, Sycamore, Elder	2.4	104	C2
86	Hawthorn, Willow, Birch	1.3	104	B2
87	Hawthorn, Blackthorn	1.3	104	C2
88	Elder, Willow, Hawthorn	2.4	104	C2
89	Sycamore, Elder, Ash	3.6	104	B2
90	Blackthorn, Hawthorn, Ash	2.4	104	C2
91	Elder, Sycamore, Hawthorn	2.3	104	C2
92	Hawthorn, Elder, Blackthorn, Hazel	2.1	104	C2
93	Elder, Hawthorn	1.8	104	C2
94	Ash, Elder, Hawthorn	1.8	104	C2
95	Hawthorn, Elder	1.8	104	C2
96	Hawthorn, Elder	1.8	104	C2
97	Hawthorn, Lawson cypress, Elder, Hazel	1.8	104	B2



- KEY** BS 5837: 2012 Categories
- Tree Category A - High Quality
 - A Category - Hedgerow, Group, Woodland
 - Tree Category B - Moderate Quality
 - B Category - Hedgerow, Group, Woodland
 - Tree Category C - Low Quality
 - C Category - Hedgerow, Group, Woodland
 - Tree Category U - Unsuitable for Retention
 - U Category - Hedgerow, Group, Woodland
 - Root Protection Area to BS 5837:2012
 - Shrub Mass / Off-site Tree / OOS (Out of scope)
 - Tree Preservation Order (TPO) High Stanton, Burnt Strip No. 1 & No. 2 - Order 1985
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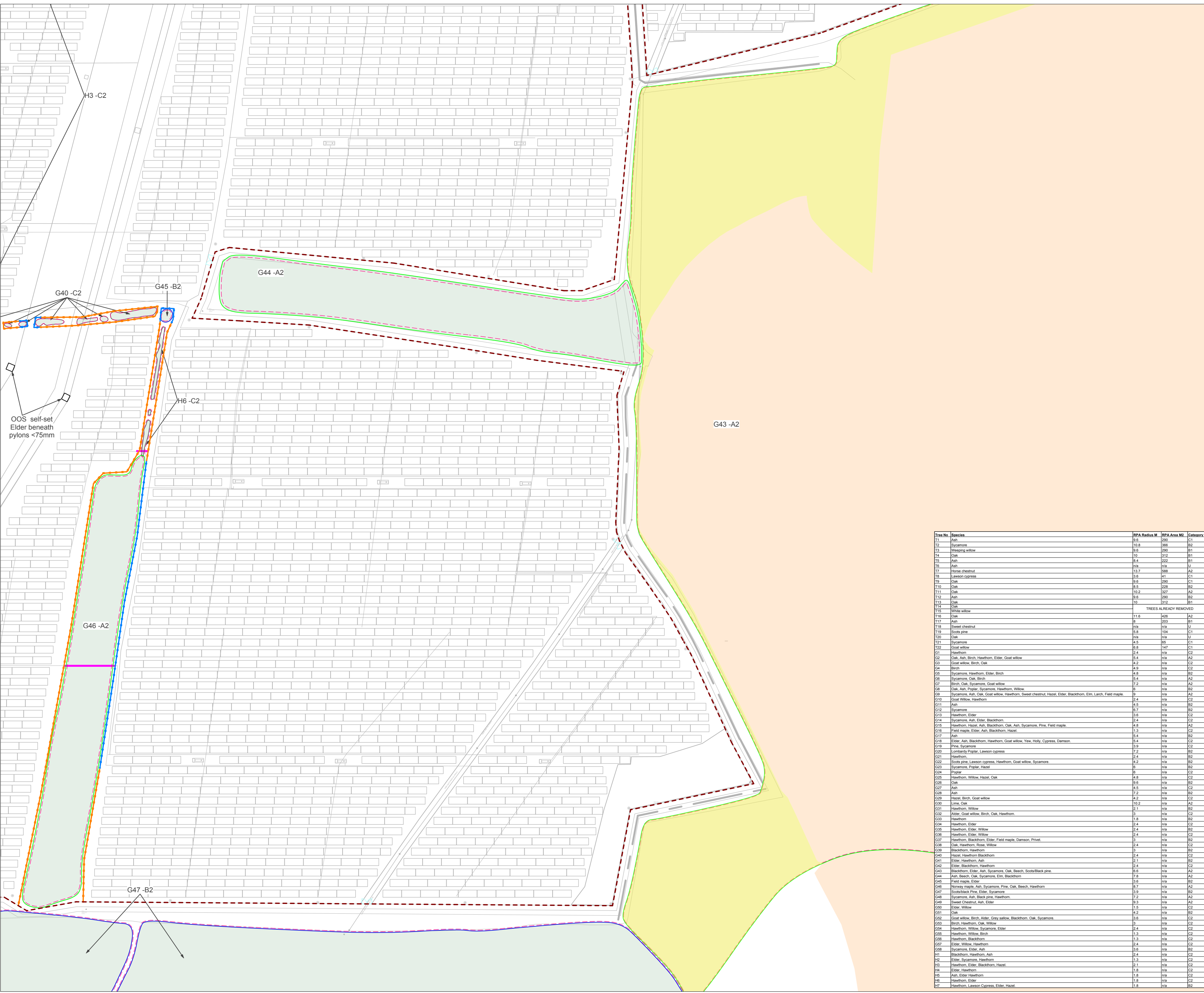
Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross check with specific requirements of any relevant planning conditions)



PROJECT TITLE		Little Crow Solar Farm, Broughton, Scunthorpe (L2991)	
DRAWING TITLE		Tree Protection Plan	
SCALE	1:2500 @ A2	DRAWING NUMBER	BHA_235_03
DRAWN BY	SD	APPROVED BY	RH
REVISION	D	SHEET	4/5
DATE	19/10/2020		
CLIENT			
INRG Solar Ltd			
COORDINATE SYSTEM / DATUM			
British National Grid / Newlyn Datum (AOD)			
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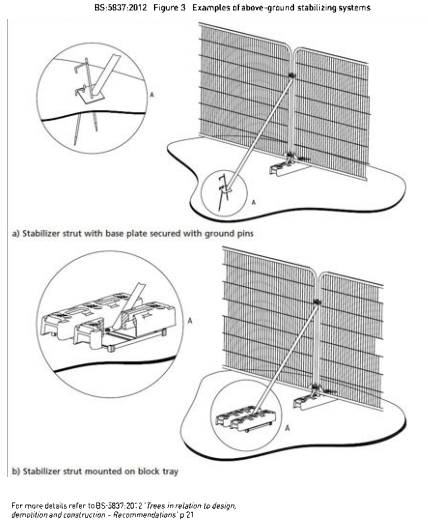
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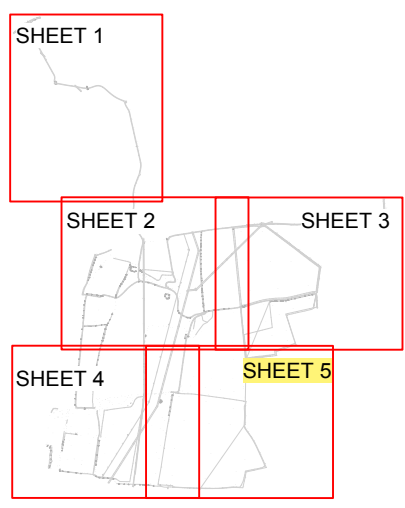


KEY BS 5837 : 2012 Categories

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Tree No.	Species	IRPA Radius M	IRPA Area M2	Category
T1	Ash	9.6	290	C1
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T4	Oak	10	312	B1
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T6	Ash	10.8	366	U
T7	Horse chestnut	13.7	588	A2
T8	Lawson cypress	5.6	41	C1
T9	Oak	9.6	290	C1
T10	Oak	8.5	228	B2
T11	Oak	10.2	327	A2
T12	Ash	9.6	290	B2
T13	Oak	10	312	B1
T14	Oak			
T15	White willow			
T16	Oak	11.6	426	A2
T17	Ash	8	203	B1
T18	Sweet chestnut	n/a	n/a	U
T19	Scotts pine	5.8	104	C1
T20	Oak	n/a	n/a	U
T21	Sycamore	4.5	65	C1
T22	Goat willow	8.8	147	C1
G1	Hawthorn	2.4	n/a	C2
G2	Oak, Ash, Birch, Hawthorn, Elder, Goat willow	5.4	n/a	A2
G3	Goat willow, Birch, Oak	4.2	n/a	C2
G4	Birch	4.8	n/a	C2
G5	Sycamore, Hawthorn, Elder, Birch	4.8	n/a	B2
G6	Sycamore, Oak, Birch	5.4	n/a	A2
G7	Birch, Oak, Sycamore, Goat willow	7.2	n/a	A2
G8	Oak, Ash, Poplar, Sycamore, Hawthorn, Willow	6	n/a	B2
G9	Sycamore, Ash, Oak, Goat willow, Hawthorn, Sweet chestnut, Hazel, Elder, Blackthorn, Elm, Larch, Field maple	2.4	n/a	A2
G10	Goat Willow, Hawthorn	2.4	n/a	C2
G11	Ash	4.5	n/a	B2
G12	Sycamore	6.7	n/a	B2
G13	Hawthorn, Elder	3.6	n/a	C2
G14	Sycamore, Ash, Elder, Blackthorn	2.4	n/a	C2
G15	Hawthorn, Hazel, Ash, Blackthorn, Oak, Ash, Sycamore, Pine, Field maple	4.8	n/a	A2
G16	Field maple, Elder, Ash, Blackthorn, Hazel	1.3	n/a	C2
G17	Ash	5.4	n/a	B2
G18	Elder, Ash, Blackthorn, Hawthorn, Goat willow, Yew, Holly, Cypress, Damson	5.4	n/a	C2
G19	Pine, Sycamore	3.9	n/a	C2
G20	Lombardy Poplar, Lawson cypress	7.2	n/a	C2
G21	Hawthorn	2.4	n/a	B2
G22	Scotts pine, Lawson cypress, Hawthorn, Goat willow, Sycamore	4.2	n/a	B2
G23	Sycamore, Poplar, Hazel	6	n/a	B2
G24	Poplar	6	n/a	B2
G25	Hawthorn, Willow, Hazel, Oak	4.8	n/a	C2
G26	Oak	9.6	n/a	B2
G27	Ash	4.5	n/a	C2
G28	Ash	7.2	n/a	B2
G29	Hazel, Birch, Goat willow	4.2	n/a	C2
G30	Lime, Oak	10.2	n/a	A2
G31	Hawthorn, Willow	2.1	n/a	B2
G32	Alder, Goat willow, Birch, Oak, Hawthorn	3	n/a	C2
G33	Hawthorn	1.8	n/a	B2
G34	Hawthorn, Elder	2.4	n/a	C2
G35	Hawthorn, Elder, Willow	2.4	n/a	B2
G36	Hawthorn, Elder, Willow	2.4	n/a	C2
G37	Hawthorn, Blackthorn, Elder, Field maple, Damson, Privet	3	n/a	B2
G38	Oak, Hawthorn, Rose, Willow	2.4	n/a	B2
G39	Blackthorn, Hawthorn	2.4	n/a	C2
G40	Hazel, Hawthorn, Blackthorn	2.4	n/a	C2
G41	Elder, Hawthorn, Ash	2.1	n/a	B2
G42	Elder, Blackthorn, Hawthorn	2.4	n/a	C2
G43	Blackthorn, Elder, Ash, Sycamore, Oak, Beech, Scots/Black pine	6.6	n/a	A2
G44	Ash, Beech, Oak, Sycamore, Elm, Blackthorn	7.8	n/a	A2
G45	Field maple, Elder	5.8	n/a	B2
G46	Norway maple, Ash, Sycamore, Pine, Oak, Beech, Hawthorn	8.7	n/a	A2
G47	Scots/black Pine, Elder, Sycamore	3.9	n/a	A2
G48	Sycamore, Ash, Black pine, Hawthorn	7.2	n/a	B2
G49	Sweet Chestnut, Ash, Elder	0.3	n/a	A2
G50	Elder, Willow	1.5	n/a	B2
G51	Oak	4.2	n/a	C2
G52	Goat willow, Birch, Alder, Grey sallow, Blackthorn, Oak, Sycamore	3.6	n/a	B2
G53	Birch, Hawthorn, Oak, Willow	3	n/a	C2
G54	Hawthorn, Willow, Sycamore, Elder	2.4	n/a	C2
G55	Hawthorn, Willow, Birch	1.3	n/a	C2
G56	Hawthorn, Blackthorn	1.3	n/a	C2
G57	Elder, Willow, Hawthorn	2.4	n/a	B2
G58	Sycamore, Elder, Ash	3.6	n/a	B2
G59	Blackthorn, Hawthorn, Ash	1.3	n/a	C2
G60	Blackthorn, Hawthorn, Ash	1.3	n/a	C2
G61	Hawthorn, Elder, Blackthorn, Hazel	2.1	n/a	C2
G62	Elder, Hawthorn	1.8	n/a	C2
G63	Ash, Elder, Hawthorn	1.8	n/a	C2
G64	Hawthorn, Elder	1.8	n/a	C2
G65	Hawthorn, Lawson Cypress, Elder, Hazel	1.8	n/a	B2

GRID NORTH

0 20 40 60 80 100 Meters

PROJECT TITLE
Little Crow Solar Farm, Broughton, Scunthorpe (L2991)

DRAWING TITLE
Tree Protection Plan

SCALE: **1:2500 @ A2** DRAWING NUMBER: **BHA_235_03**

DRAWN BY: **SD** APPROVED BY: **RH** REVISION: **D** SHEET: **5/5** DATE: **19/10/2020**

CLIENT: **INRG Solar Ltd**

COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

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APPENDIX 7

GLOSSARY OF TERMS

GLOSSARY OF ARBORICULTURAL TERMS

Abscission. The shedding of a leaf or other short-lived part of a woody plant, involving the formation of a corky layer across its base; in some tree species twigs can be shed in this way

Abiotic. Pertaining to non-living agents; e.g. environmental factors

Absorptive roots. Non-woody, short-lived roots, generally having a diameter of less than one millimetre, the primary function of which is uptake of water and nutrients

Adaptive growth. In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress

Adaptive roots. The adaptive growth of existing roots; or the production of new roots in response to damage, decay or altered mechanical loading

Adventitious shoots. Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage. The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Architecture. In a tree, a term describing the pattern of branching of the crown or root system

Axil. The place where a bud is borne between a leaf and its parent shoot

Bacteria. Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms

Bark. A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Basidiomycotina (Basidiomycetes). One of the major taxonomic groups of fungi; their spores are borne on microscopic peg-like structures (basidia), which in many types are in turn borne on or within conspicuous fruit bodies, such as brackets or toadstools. Most of the principal decay fungi in standing trees are basidiomycetes

Bolling. A term sometimes used to describe pollard heads

Bottle-butt. A broadening of the stem base and buttresses of a tree, in excess of normal and sometimes denoting a growth response to weakening in that region, especially due to decay involving selective delignification

Bracing. The use of rods or cables to restrain the movement between parts of a tree

Branch:

- **Primary.** A first order branch arising from a stem
- **Lateral.** A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
- **Sub-lateral.** A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Branch bark ridge. The raised arc of bark tissues that forms within the acute angle between a branch and its parent stem

Branch collar. A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

Brown-rot. A type of wood decay in which cellulose is degraded, while lignin is only modified

Buckling. An irreversible deformation of a structure subjected to a bending load

Buttress zone. The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

Cambium. Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Canker. A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

Canopy. Tree species that mature to form a closed woodland canopy

Cleaning out. The removal of dead, crossing, weak, and damaged branches, where this will not damage or spoil the overall appearance of the tree

Compartmentalization. The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Compression strength. The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees with special drilling devices

Compressive loading. Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition. An indication of the physiological condition of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

Construction exclusion zone. Area based on the Root Protection Area (in square metres) to be protected during development, by the use of barriers and/or ground protection

Crown/Canopy. The main foliage bearing section of the tree

Crown lifting. The removal of limbs and small branches to a specified height above ground level

Crown thinning. The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

Crown reduction/shaping. A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

Crown reduction/thinning. Reduction of the canopy volume by thinning to remove dominant branches whilst preserving, as far as possible the natural tree shape

Deadwood. Dead branch wood

Decurrent. In trees, a system of branching in which the crown is borne on a number of major widely-spreading limbs of similar size (cf. excurrent). In fungi with toadstools as fruit bodies, the description of gills which run some distance down the stem, rather than terminating abruptly

Defect. In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Delamination. The separation of wood layers along their length, visible as longitudinal splitting

Dieback. The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease. A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

Distal. In the direction away from the main body of a tree or subject organism (cf. proximal)

Dominance. In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

Dormant bud. An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood

DBH (Diameter at Breast Height). Stem diameter measured at a height of 1.5 metres (UK) or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified

Deadwood. Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree.

Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

Endophytes. Micro-organisms which live inside plant tissues without causing overt disease, but in some cases capable of causing disease if the tissues become physiologically stressed, for example by lack of moisture

Epicormic shoot. A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

Excrescence. Any abnormal outgrowth on the surface of tree or other organism

Excurrent. In trees, a system of branching in which there is a well-defined central main stem, bearing branches which are limited in their length, diameter and secondary branching (cf. decurrent)

Fastigiate. Having upright, often clustered branches

Felling licence. In the UK, a permit to fell trees in excess of a stipulated number of stems or volume of timber

Fieled layer. Herbs, ferns, grasses and sedges

Flush-cut. A pruning cut which removes part of the branch bark ridge and or branch-collar

Girdling root. A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

Ground layer. Mosses, ivy, lichens and fungi

Guying. A form of artificial support with cables for trees with a temporarily inadequate anchorage

Habit. The overall growth characteristics, shape of the tree and branch structure

Hazard beam. An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

Heartwood/false-heartwood/ripewood. Sapwood that has become dysfunctional as part of the natural aging processes

Heave. A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

High canopy tree species. Tree species having potential to contribute to the closed canopy of a mature woodland or forest

Incipient failure. In wood tissues, a mechanical failure which results only in deformation or cracking, and not in the fall or detachment of the affected part

Included bark (ingrown bark). Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

Increment borer. A hollow auger, which can be used for the extraction of wood cores for counting or measuring wood increments or for inspecting the condition of the wood

Infection. The establishment of a parasitic micro-organism in the tissues of a tree or other organism

Internode. The part of a stem between two nodes; not to be confused with a length of stem which bear nodes but no branches

Lever arm. A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

Lignin. The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

Lions tailing. A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end-loading

Loading. A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Longitudinal. Along the length (of a stem, root or branch)

Lopping. A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting

Mature Heights (approximate):

- **Low maturing** – less than 8 metres high
- **Moderately high maturing** – 8 – 12 metres high
- **High maturing** – greater than 12 metres high

Microdrill. An electronic rotating steel probe, which when inserted into woody tissue provides a measure of tissue density

Minor deadwood. Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree

Mulch. Material laid down over the rooting area of a tree or other plant to help conserve moisture; a mulch may consist of organic matter or a sheet of plastic or other artificial material

Mycelium. The body of a fungus, consisting of branched filaments (hyphae)

Occluding tissues. A general term for the roll of wood, cambium and bark that forms around a wound on a woody plant (cf. woundwood)

Occlusion. The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen. A micro-organism which causes disease in another organism

Photosynthesis. The process whereby plants use light energy to split hydrogen from water molecules, and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products

Phytotoxic. Toxic to plants

Pollarding. The removal of the tree canopy, back to the stem or primary branches, usually to a point just outside that of the previous cutting. Pollarding may involve the removal of the entire canopy in one operation, or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species

Primary branch. A major branch, generally having a basal diameter greater than 0.25 x stem diameter

Primary root zone. The soil volume most likely to contain roots that are critical to the health and stability of the tree and normally defined by reference BS5837 (2005) Guide for Trees in Relation to Construction.

Priority. Works may be prioritised, 1. = high, 5. = low

Probability. A statistical measure of the likelihood that a particular event might occur

Proximal. In the direction towards from the main body of a tree or other living organism (cf. distal)

Pruning. The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Radial. In the plane or direction of the radius of a circular object such as a tree stem

Rams-horn. In connection with wounds on trees, a roll of occluding tissues which has a spiral structure as seen in cross-section

Rays. Strips of radially elongated parenchyma cells within wood and bark. The functions of rays include food storage, radial translocation and contributing to the strength of wood

Reactive Growth/Reaction Wood. Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Removal of dead wood. Unless otherwise specified, this refers to the removal of all accessible dead, dying and diseased branchwood and broken snags

Removal of major dead wood. The removal of, dead, dying and diseased branchwood above a specified size

Respacing. Selective removal of trees from a group or woodland to provide space and resources for the development of retained trees.

Residual wall. The wall of non-decayed wood remaining following decay of internal stem, branch or root tissues

Rib. A ridge of wood that has usually developed because of locally increased mechanical loading. Often associated with internal cracking in the wood of the stem, branch or root.

Ring-barking (girdling). The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

Root-collar. The transitional area between the stem/s and roots

Root-collar examination. Excavation of surfacing and soils around the root-collar to assess the structural integrity of roots and/or stem

Root protection area. An area of ground surrounding a tree that contains sufficient rooting volume to ensure the tree's survival. Calculated with reference to Table 2 of BS5837 (2005) and shown in plan form in square metres

Root zone. Area of soils containing absorptive roots of the tree/s described. The **Primary** root zone is that which we consider of primary importance to the physiological well-being of the tree

Sapwood. Living xylem tissues

Secondary branch. A branch, generally having a basal diameter of less than 0.25 x stem diameter

Selective delignification. A kind of wood decay (white-rot) in which lignin is degraded faster than cellulose

Shedding. In woody plants, the normal abscission, rotting off or sloughing of leaves, floral parts, twigs, fine roots and bark scales

Silviculture. The practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values

Silvicultural thinning. Removal of selected trees to favour the development of retained specimens to achieve a management objective

Simultaneous white-rot. A kind of wood decay in which lignin and cellulose are degraded at about the same rate

Snag. In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point

Soft-rot. A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

Spores. Propagules of fungi and many other life-forms; most spores are microscopic and dispersed in air or water

Shrub species. Woody perennial species forming the lowest level of woody plants in a woodland and not normally considered to be trees

Sporophore. The spore bearing structure of fungi

Sprouts. Adventitious shoot growth erupting from beneath the bark

Stem/s. The main supporting structure/s, from ground level up to the first major division into branches

Stress. In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

Stress. In mechanics, the application of a force to an object

Stringy white-rot. The kind of wood decay produced by selective delignification

Storm. A layer of tissue which supports the fruit bodies of some types of fungi, mainly ascomycetes

Structural roots. Roots, generally having a diameter greater than ten millimetres, and contributing significantly to the structural support and stability of the tree

Subsidence. In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

Subsidence. In relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight

Taper. In stems and branches, the degree of change in girth along a given length

Target canker. A kind of perennial canker, containing concentric rings of dead occluding tissues

Targets. In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

Topping. In arboriculture, the removal of the crown of a tree, or of a major proportion of it

Torsional stress. Mechanical stress applied by a twisting force

Translocation. In plant physiology, the movement of water and dissolved materials through the body of the plant

Transpiration. The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

Tree Risk Assessment. An assessment and description of the risks and where appropriate the values associated with a tree or trees. The primary risk being considered is that from falling trees. Other risks, such as damage to infrastructure, interruption of service and building subsidence may also be considered.

- Walkover – A general view of the tree population considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Drive-by - A general view of the tree population from a moving vehicle and considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Individual – the assessment of risks from a single tree considered in the context of the adjacent land-use to identify trees that present significantly elevated risks

Understorey. This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

Understorey tree species. Tree species not having potential to attain a size at which they can contribute to the closed high canopy of a woodland

Vascular wilt. A type of plant disease in which water-conducting cells become dysfunctional

Vessels. Water-conducting cells in plants, usually wide and long for hydraulic efficiency; generally not present in coniferous trees

Veteran tree. A loosely defined term for an old specimen that is of interest biologically, culturally or aesthetically because of its age, size or condition and which has usually lived longer than the typical upper age range for the species concerned

Vigour. The expression of carbohydrate expenditure to growth (in trees)

Vitality. A measure of physiological condition expressed through the health and growth of foliage, shoots and adaptive woody tissues.

Volunteer trees. Trees arising from natural colonisation rather than having been planted

White-rot. A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

Wind exposure. The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

Wind pressure. The force exerted by a wind on a particular object

Windthrow. The blowing over of a tree at its roots

Wound dressing. A general term for sealants and other materials used to cover wounds in the hope of protecting them against desiccation and infection; only of proven value against fresh wound parasites

Woundwood. Wood with atypical anatomical features, formed in the vicinity of a wound

