



**Brindle
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Arboricultural Impact Assessment

Land to the North of Leicester Road, Markfield

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www.brindlegreen.co.uk

Head Office

Brindle & Green Limited
Unit 3 Silverhill Court, Radbourne, Derby, DE6 4LY

Tel: 0800 222 9105

Sheffield Office

Brindle & Green Limited
Horizon House
Whiting Street
Sheffield S8 9QR

Barnsley Office

Brindle & Green Limited
Sergeants House
36 Edderthorpe Lane
Barnsley S73 9AT

London Office

Brindle & Green Limited
Nutter Lane
Wanstead
London E11 2HZ

Kent Office

Brindle & Green Limited
Sandy Lane
Sevenoaks
Kent TN13 3TP

Document Control

Report	Name	Signature	Date
Prepared by	Henry Richardson Assistant Arboriculturist		27/10/2023
1 st Check by	Laura Emmerson Arboricultural Consultant TechArborA		30/10/2023
2 nd Check by	Joe Gilmour Associate Director		31/10/2023
Issued by (PDF)	Henry Richardson Assistant Arboriculturist		02/11/2023
REV1 issued by			

Revision Details

Revision	Approved	Revision Details

Project Details

Project carried out by:

Brindle and Green

Unit 3, Silverhill Court

Radbourne

Derby

DE6 4LY

Head Office: 01332 825771

Email: info@brindlegreen.co.uk

Website: www.brindlegreen.co.uk

Project carried out for:

Charterpoint (LE67) Limited

7 Wheatcroft Business Park

Nottingham

NG12 4DG

Project site:

Land to the North of Leicester Road

Markfield

Hinckley and Bosworth

Leicestershire

LE67 9RE

Grid reference: SK 49468 10274

W3W: [forensic.dusts.dispenser](#)

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1 Summary

1.1 Scope of report

- 1.1.1 Brindle & Green were commissioned by Charterpoint (LE67) Limited to undertake a BS 5837:2012 Tree Survey and Arboricultural Impact Assessment (AIA) on an area of land north of Leicester Road, Markfield in Hinckley and Bosworth, Leicestershire. This report summarises any potential arboricultural impacts and outlines a tree protection plan in relation to a full planning application for the residential development of senior living accommodation with associated car parking, access, and soft landscaping. Design proposals can be found in Appendix 4. The survey was carried out on the 14th April 2023.
- 1.1.2 This report is concerned with trees that have the possibility to be impacted as a result of development proposals at the site. This includes trees within the site, as well as any outside the boundary that may be impacted by the development and any subsequent post development activity.
- 1.1.3 This report and accompanying tree survey schedule are produced in accordance with the guiding principles of British Standard BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.
- 1.1.4 This report and associated tree survey aim to inform tree mitigation and/or removal for potential development at the site; it is not a health and safety survey. Observations on tree form and condition, from which management recommendations are made, are based upon ground-level visual assessments only. It is important to note that trees are dynamic and often unpredictable; even apparently healthy trees may occasionally fail.

1.2 Desk study

- 1.2.1 Use of Hinckley and Bosworth Borough Council's online interactive mapping software confirmed that the site was not located within a Conservation Area, nor were there any Tree Preservation Orders relevant to the site (map last accessed 26th October 2023).

1.3 Summary of conclusions

- 1.3.1 A section of G1 is recommended for removal to facilitate the proposed access from Leicester Road. T13 is considered suitable for monolithing at a height of 2-3m for ecological value, dependent on ownership. A tree protection plan, complete with removal recommendations and

mitigation measures has been proposed for the development. The proposed mitigation will be the use of Construction Exclusion Zones, and both permanent and temporary ground protection. The tree protection plan can be found in Appendix 2.

Table 1: Arboricultural considerations relevant to the site

Arboricultural Considerations	Recommendations	Timing
Tree removal/site clearance	Removal of trees/groups of trees to facilitate the development, or due to poor condition.	Pre-commencement and undertaken either outside the breeding bird season (March to September) or during the breeding bird season under ecological supervision
Construction Exclusion Zone (CEZ)	CEZs should be installed to protect retained trees (including RPAs), where required.	Pre-construction
Ground protection	Ground protection (temporary and/or permanent) should be installed to protect the RPAs of retained trees, where required.	Pre-construction and/or during construction
Removal of CEZs and/or temporary ground protection	Removal of the installed tree protection measures after completion of construction onsite.	Post-construction after approval of project arboriculturist
Tree planting	Planting with a mix of native and ornamental species.	Post-construction

2 Introduction

2.1 Context

2.1.1 The purpose of this survey was to provide an assessment of trees which may be impacted by development proposals at an area of land north of Leicester Road, Markfield in Hinckley and Bosworth, Leicestershire. A tree survey schedule, compliant with the guiding principles of BS 5837:2012, is contained within this report.

2.1.2 Results and recommendations contained within this report have been prepared by an experienced arboriculturist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, and the results of the desk study and our survey of the site. This report pertains to this information only.

2.2 Purpose of the report

2.2.1 This AIA will evaluate the direct and indirect effects of the proposed development on the site's trees. It will consider the requirement for tree removal to facilitate the design and any potentially damaging activities to retained trees (British Standards Institution, 2012).

2.2.2 An AIA will typically address some, or all, of the following:

- The tree survey (including survey schedule and maps)
- Trees selected for retention
- Trees to be removed
- Facilitation pruning requirements
- Evaluation of the impact of proposed tree losses
- Mitigation measures to implement the design
- Tree protection plan

2.3 The site

2.3.1 The red line boundary is approximately 1.2 hectares in extent and comprises a grassland field previously used as a horse grazing paddock. Two disused stable buildings are located on the site.

The site is bordered by native hedgerows and a broadleaved woodland belt, W1, to the north. The arboricultural features are predominantly located along the site boundaries, with only T2 and G3 located in the central area of the site. T2, is a large, Category B mature common oak, providing significant arboricultural and landscape value. The eastern, southern and western boundaries are predominantly comprised of semi-mature common ash with various species interspersed, providing landscape value against Leicester Road and other adjacent land. W1, a mixed species, broadleaved woodland on the northern boundary, provides significant landscape value as a screening feature against the adjacent A50. The wider surroundings of the site are predominantly residential to the south, with further, expansive areas of woodland and grassland to the north, beyond the A50. The site is located north of Leicester Road, in Markfield, Leicestershire, approximately 7 miles north-west of Leicester city centre. The site is the subject of a full planning application for the residential development of senior living accommodation with associated car parking, access, and soft landscaping. Design proposals can be found in Appendix 4.

3 Methodology

3.1 Tree survey parameters

3.1.1 The tree survey was undertaken in accordance with the guiding principles of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.'

3.1.2 Individual trees, groups of trees, woodlands and hedgerows are surveyed. A group of trees constitutes a cohesive arboricultural feature, either aerodynamically, visually or culturally. Where groups or woodlands are surveyed, individual trees may still be assessed if they vary significantly in their attributes.

3.1.3 Information recorded in the survey includes:

- **Species** – listed by common name. In the case of groups, all woody species present will be recorded.
- **Tree Height** – estimated in metres. In the case of groups, the average group height is recorded.
- **Crown Height** – height to the lowest branch is estimated in metres for each cardinal direction. In the case of groups, the minimum crown height is recorded.
- **Stem Diameters** – diameters of single-stemmed trees on level ground are measured at 1.5 metres above ground to the nearest 10 millimetres. Other commonly encountered trees (i.e. multi-stemmed or those on sloping ground) are measured in accordance with Figure C.1, BS 5837:2012.
- **Crown Spread** – recorded in metres along each of the cardinal points. In the case of groups, the maximum peripheral spread is recorded.
- **Life Stage** – recorded as young, semi-mature, mature, veteran, ancient or dead and defined in Table 2.

Table 2: Definitions of tree life-stages, as recorded in the survey schedule

Tree life-stage	Definition
Young	A tree within its first third of life expectancy. Established, but with significant growth remaining to reach ultimate size.
Semi-mature	A tree within its second third of life expectancy. Reaching its ultimate potential height, with slowing growth rate but will still increase in stem diameter and crown spread.
Mature	A tree within its final third of life expectancy. Limited potential for any significant further increase in size, even when healthy. Reasonable remaining life expectancy.
Veteran	A tree with features of biological, cultural or aesthetic value that are characteristic of individuals surviving beyond the typical age range for the species concerned.
Ancient	A tree that has passed beyond maturity and is very old in comparison to other trees of the same species.
Dead	The tree is dead; age up till death is of no significance.

- **General Observations** – including physiological condition (good, fair, poor, decline, dead) and any preliminary management recommendations. In the case of groups, the category awarded is that typical of the group.
- **Life Expectancy** – estimated remaining contribution in years (<10, 10+, 20+, 40+).

3.1.4 Trees will then be categorised as per the criteria shown in Table 3, to ascertain the quality and value of the existing tree stock.

3.2 Root Protection Areas (RPAs)

3.2.1 The **Root Protection Areas** are calculated and recorded in the survey schedule. RPAs are expressed in both linear and square metres. The RPA comprises the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability. The RPA is where the protection of the roots and soil structure is treated as a priority; it is at this distance/around this area that the tree protective fencing should be erected around any trees to be retained.

- 3.2.2 The default position is that structures are located outside the RPAs of trees to be retained. However, development within RPAs might be proposed when technical solutions allow the tree to remain viable. Such specialist guidance is therefore provided herein, where necessary.

3.3 General information and tree survey limitations

- 3.3.1 Tree surveys will be plotted directly onto a topographical survey whenever possible. If a topographical survey has not been undertaken, a digital OS map of the site will be used.
- 3.3.2 Surveyed trees are plotted using a Trimble TDC600 handheld device, partnered with a Geode GPS receiver (GNS2 Multi-GNSS 1Hz Receiver). Normal error of up to 0.5m can be experienced using this device, however care is taken to use the most accurate reading possible.
- 3.3.3 Where offsite trees have the potential to be impacted by the development proposals, they will be included within the tree survey; all measurements for offsite trees will be estimated from the site. Whenever tree measurements are estimated, this is represented with a # in the survey schedule. Note, detailed visual inspections may not be possible for offsite trees, as potential features/defects may not be visible from the site.

3.4 Report lifespan

- 3.4.1 We expect the results and recommendations of this report to be accurate for 2 years; however, tree condition may change following extreme weather events, damage or other unforeseen circumstances.

Table 3: Cascade chart for tree quality assessment (BS 5837:2012)

Category and definition	Criteria (including sub-categories where appropriate)		
Trees unsuitable for retention			
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	– Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). – Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. – Trees infected with pathogens of significance to the health and/or safety for the trees nearby, or very low-quality trees suppressing adjacent trees of better quality. – <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i>		
Trees to be considered for retention	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but	Trees with material conservation or other cultural value

Category and definition	Criteria (including sub-categories where appropriate)		
	unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	situated so as to make little visual contribution to the wider locality	
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

4 Arboricultural Impact Assessment

4.1 Presence of Tree Preservation Orders (TPOs) or Conservation Areas

- 4.1.1 Use of Hinckley and Bosworth Borough Council's online interactive mapping software confirmed that the site was not located within a Conservation Area, nor were there any Tree Preservation Orders relevant to the site (map last accessed 26th October 2023).

4.2 Potential for tree damage during development

- 4.2.1 Many development activities have the potential to damage trees, either directly or indirectly. Direct damage could include root severance, accidental damage to the crown or impact damage, whilst indirect damage predominantly involves soil compaction and the subsequent root loss.
- 4.2.2 Severing just one of a tree's major roots during careless excavation for construction can cause the loss of up to 20 per cent of the root system; this undermines the tree's ability to absorb water and leaves it unstable in high winds. In general, 80-90% of all tree roots are found in the top 600mm of soil, and almost 99% of the tree's total root length occurs within the topmost 1m of soil, with some variations depending on soil porosity. The potential nuisance that fine root systems create for the development of specific sites must be weighed against the importance that they play in soil stabilisation on sloping ground (acting in a similar way to geotextile matting).
- 4.2.3 The early provision of physical protection against damage and technical solutions are essential, to ensure the site's retained trees remain healthy and viable.

4.3 Potential incompatibilities between the layout and trees proposed for retention

Construction Exclusion Zones (CEZs)

- 4.3.1 One large Construction Exclusion Zone (CEZ) is to be established prior to the commencement of any works onsite.
- The CEZ will protect all of the retained trees and groups of trees within the redline. The exclusion fencing will extend from the proposed access at the eastern extent of T12, around the perimeter of the site, back round to the access at the western extent of the retained section of G1. Where CEZ fencing is to be installed along the southern boundary, a

minimum of 1m will be left between the fencing and the development, to allow sufficient room for construction works. Temporary ground protection is to be installed where a considerable portion of the RPAs of T6, T7, T9 and T11 is left exposed. Where fencing is to be installed along the western boundary, the fencing will be sited along the bottom of the proposed banking. Crown reduction works up to approximately 1.5m may be required to the north-eastern extent of G1, to facilitate the proposed fencing and prevent conflict with adjacent hard surfacing.

- 4.3.2 CEZs are always to be afforded protection and will be protected by fencing. No equipment or machinery will be stored within CEZs, nor will vehicles or personnel enter these areas. Ground levels will not be changed within CEZs and existing vegetation will be left undisturbed. Regular checks of the tree protection fencing should be carried out by a suitably qualified arboricultural consultant. The indicative locations of the CEZs can be seen on the tree protection plan in Appendix 2; the precise fencing location may require minor adjustment onsite due to local site conditions, but is not expected to differ from that shown on the tree protection plan. In some instances, tree removal or facilitative pruning works will be required for fencing installation; tree protection fencing will be installed immediately after these tree works are completed.

Permanent ground protection

- 4.3.3 Plans show a new hard surfacing roundabout proposed within the RPA of T7. This hard surfacing is expected to cover approximately 22% of the RPA, however, major rooting material is not expected to be impacted due to considerable soil compaction caused by the existing horse paddock situated in the location of the proposed roundabout. This design is considered suitable based upon the use of permanent ground protection (3D cellular confinement system sub-base, e.g., geocells) and no-dig methods of construction within the RPA. Cellular confinement systems distribute the load associated with vehicle/pedestrian use laterally across the ground surface, helping to prevent soil compaction. A geocell depth of 150mm is considered appropriate for regular vehicle use. The ground protection will remain in place permanently to protect the roots. The hardstanding applied must have a permeable finish to allow water to percolate to the roots. Any existing hard surfacing will be removed with hand tools, e.g. pneumatic breakers. The required locations of permanent ground protection can be seen on the tree protection plan in Appendix 2.

- 4.3.4 Note, the geocells are installed above the existing ground level and, therefore, normally raise surface levels; levels are typically raised by approximately 150mm for footpaths (relative to existing ground levels) and approximately 300mm for driveways and roads. In certain instances, these differences in ground levels may make this approach to building in the RPA unfeasible. If level changes cannot be accommodated, plans require revisiting and proposed hardstanding relocating from the RPA. Specifications of the permanent ground protection should be produced or approved by a civil engineer.

Temporary ground protection

- 4.3.5 Where temporary access or construction working space is required within the RPA of T6, T7, T9, and T11, temporary ground protection will be installed to prevent soil compaction.
- 4.3.6 As per BS 5837:2012, temporary ground protection must be capable of supporting the additional load within the RPA. For pedestrian movements only, the temporary ground protection will comprise a single thickness of scaffold boards placed onto a 100mm layer of woodchip, laid on a geotextile membrane. For pedestrian operated plant (up to 2 t), the ground protection will consist of interlinked ground-protection boards, laid on top of a compression resistant layer (as above, 100mm woodchip) on a geotextile membrane. Heavier plant (exceeding 2 tonnes) requires an alternative system to accommodate the load, which must be discussed with the project arboriculturist. The required locations of temporary ground protection can be seen on the tree protection plan in Appendix 2.

Specialist foundations

- 4.3.7 There is no requirement for specialist foundations, due to the absence of conflict between the proposed dwelling and the RPAs of retained trees.

Soft-landscaping within RPAs

- 4.3.8 Groundworks are expected around the northern and western perimeter of the development, in close proximity to G1, creating slight sloped banks to facilitate construction. These groundworks are expected to disturb approximately 4% of the RPA of T14.

4.4 The working and access space needed for construction

- 4.4.1 Construction vehicles will use the proposed access from Leicester Road, in the south-western corner of the site. Partial removal of G1 is recommended to facilitate the proposed access and the proposed footpath extension on Leicester Road. Vegetation at the entrance will need to be cyclically pruned and maintained to avoid obstruction to visibility splays and the footpath.
- 4.4.2 Access into exclusion zones is strictly prohibited without prior amendments to the mitigation proposed. Similarly, building materials must also be stored outside of the CEZs to avoid soil compaction or physical damage.

4.5 Trees proposed for removal

- 4.5.1 G1, a Category C group along the southern boundary, is recommended for partial removal to facilitate the proposed access from Leicester Road. The length of removal is approximately 22m, with further thinning works required to an additional 10m along the southern face of the group to facilitate the proposed footpath. G1 is predominantly comprised of common hawthorn and blackthorn, with interspersed common holly and young common ash, and provides landscape value as a screening feature against Leicester Road.
- 4.5.2 T13, a semi-mature common ash, is recommended for monolithing at a height of 2-3m for ecological value, dependent on ownership of the tree. T13 exhibits significant basal decay alongside significant decay and hollowing to the main stem. The stem had previously failed at approximately 4m with the crown consistent of young regrowth. T13 is situated along the western boundary, with a wooden fence nailed to the stem.

4.6 New planting

- 4.6.1 To increase the amenity and arboricultural value of the site, the development should incorporate new planting within the scheme to offset proposed removals. Replanting should use high quality stock of mix of native and ornamental species to provide ecological, landscape and aesthetic value to the scheme. Stock selection should be discussed with a qualified arboricultural consultant to ensure appropriate trees are selected for the space available; careful consideration must be given to the ultimate height and crown spread, form, fruiting habit and maintenance implications of the chosen species. To ensure the site is replanted appropriately a robust landscape strategy and design is being developed by TPM Landscape Ltd.

4.7 Proximity of trees to structures – shading, seasonal nuisance and future pressures

- 4.7.1 Room 5 at the south-eastern extent of the proposed residence is likely to be considerably shaded by T4 and T5 on the southern boundary. Architectural solutions which maximise the amount of natural light available, such as light tunnels, should be considered for incorporation into the design of this section of the building. A shading plan for all trees surveyed can be seen in Appendix 2.
- 4.7.2 The impact of trees on buildings and vice versa and allowance for future growth have all been considered in the siting of the proposed plans. Tree size, future growth and light/shading have received due attention and are not considered to be an issue. Overall, the processes of construction are highly unlikely to have a detrimental effect upon the health of the retained trees, assuming recommendations made in this report are always adhered to by the contractors e.g., the positioning of a stout fence between the retained trees and construction activities prior to the commencement of works.

4.8 Installation of services

- 4.8.1 Details of the proposed services strategy have not yet been finalised, but it is understood that services will follow the proposed access road and lead to the building at basement level, under hard surfacing areas. Any underground services already existing on site should be utilised where possible to avoid further disturbance of RPAs. If underground services are to be installed during the establishment of the main access, they are to follow the access into the site (following the roads). If underground services are to be installed this way, then the likelihood of negatively impacting trees is kept to a minimum. Service trenches should be laid at the greatest distance from the trees as possible. Section 7.7 of BS 5837:2012's guidance on services suggests re-routing into an RPA should be avoided when at all possible. If plans were to change and services were to infringe on Root Protection Areas, effort should be taken to lay them using trenchless 'no dig' methods in order to avoid cutting major roots. Modifications to the alignment should also be made to avoid adverse effects on tree growth and soil stability. Services near existing trees and potential new planting should be ducted when possible for future maintenance. Grouping services will also minimise future disturbance where applicable.

4.9 Facilitative pruning works and further management recommendations

- 4.9.1 Crown lifting works are recommended to raise the northern crown of T7 to a height of 3.5m, to facilitate the use of the roundabout.
- 4.9.2 Any appointed contractor must carry out tree works according to BS 3998:2010 'Recommendations for Tree Work'.

5 Conclusion

- 5.1.1 A section of G1 is recommended for removal to facilitate the proposed access from Leicester Road. T13 is considered suitable for monolithing at a height of 2-3m for ecological value, dependent on ownership. All other trees identified within this report should be retained and protected as outlined via CEZs, permanent ground protection, and temporary ground protection.
- 5.1.2 Tree removal will take place outside of the breeding bird season (March-September) to prevent disturbance. Alternatively, this may be completed under ecological supervision/ reasonable avoidance measures.
- 5.1.3 Due to the nature of the development, it is unlikely there will be any major impacts on trees with higher landscape and amenity values if CEZs and areas of permanent and temporary ground protection are implemented. Fencing should be placed prior to any construction works and can be removed after the works are completed. Appendix 3 provides details of the fencing requirements for Construction Exclusion Zones.

Appendix 1 – Tree Survey Schedule

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA(m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS 5837 Category	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W							
T1#	Common Ash	Semi-mature	SE 1	14	3	550.00	6.6	136.8	4.5	5.5	4.5	4.5	6.5	4	6	6.5	Fair	Ivy	N/A	C1,2	10 to 20 yrs	Fair	Growing amongst dense hawthorn and blackthorn, obscuring lower stem and basal area. Appears to have two dominant stems at the base, one bifurcates at 0.5-1m. Ivy to stems and first significant branch. Appears to be on site, overhangs further into site. Crown in fair condition with considerable deadwood and limb failures. Epicormic growth throughout the crown. Appears to be growing atop a raised bank.
T2	Common Oak	Mature	N 2.5	15	3	1139.69	13.7	587.6	6.5	7	10	9	2	3.5	2	2.5	Fair	Fair	Fair	B1,2	20 to 40 yrs	Fair	Growing at the edge of a steep bank to a wet ditch, with a narrow stream running below the tree. Three dominant stems at the base - 2 have been estimated due to the presence of a natural brace between the stems at 0.5m and the bifurcation of one stem at 1.5m preventing tape measurement (as well as the location). Evidence of historic wounding at the base. Fallen deadwood scattered around the base. Considerable amount of large limb failures and deadwood throughout the crown, particularly to the lower crown. Electric fencing for livestock attached to largest stem. Cladoptosis in the crown. Eastern stem bifurcates at 2m, with a second bifurcation at 3.5m - one limb has failed whilst the other has formed a natural brace with a lower limb, considerable epicormic growth. Epicormic growth to multiple stems and limbs. Catastrophic, large tear out wound to the northwestern face of the eastern stem with evidence of decay and inrolled woundwood. Second large wound to limb in close proximity with decay. Stems range from fair to poor.
T3#	Common Ash	Semi-mature	SE 2.5	12	1	400.00	4.8	72.4	6	5.5	4.5	5	3.5	2.5	5	5	Fair	Ivy	N/A	C1,2	10 to 20 yrs	Fair	Prolific ivy to the stem and lower crown. Growing amongst dense scrub, obscuring VTA. No major defects visible. No overhang beyond group.
T4#	Common Ash	Semi-mature	S 3	13	1	350.00	4.2	55.4	4.5	5	5	3	6.5	6	4	10	Fair	Ivy	N/A	C2	10 to 20 yrs	Fair	Growing amongst dense group with heavy ivy to the stem. Crown skew due to competition. Landscape value against adjacent road. Slight lean east.
T5#	Common Ash	Mature	NW 3.5	11	1	450.00	5.4	91.6	6	3.5	6	7	3	9	2.5	4.5	Fair	Good	Fair	C1,2	10 to 20 yrs	Fair	One dominant stem with epicormic growth at base (120-150mm diameter, two stems). Barbed wire to epicormic. Appears to be a ditch running immediately south of the stem. Crown skew due to competition. Minor pruning over site boundary fencing. Slight overhang. Minor deadwood in the crown, east.
T6#	Common Ash	Semi-mature	E 3	10	3	397.99	4.8	71.7	5	4.5	5	6	3.5	4.5	5	5	Fair	Ivy	Fair	C2	10 to 20 yrs	Fair	Ivy to stems, appears to be 3 stemmed at base. Large occluded wound to one stem at base, east. Minor deadwood in the crown. Generally low quality. Wooden outbuilding in RPA. Overhangs outbuilding.
T7	Common Ash	Semi-mature	E 2.5	10	1	400.00	4.8	72.4	5	5.5	5	4	2	3.5	4	5	Fair	Fair	Fair	C1,2	10 to 20 yrs	Fair	Evidence of historic wire occlusion to stem. Metal partially occluded to stem, north. Wooden fencing nailed to stem. Ivy to stem has been severed. Overhanging access gate. Growing immediately at edge of ditch to the south of the stem. Epicormic growth in the lower crown.
T8#	Common Ash	Semi-mature	NW 2.5	10	1	425.00	5.1	81.7	5	5.5	6	4	2.5	2.5	3	3	Good	Good	Fair	C1,2	10 to 20 yrs	Good	Crown good to fair - minor deadwood and pruned limbs in the lower crown. Light ivy to lower stem. Minor epicormic growth.
T9#	Common Ash	Semi-mature	N 3.5	9.5	1	280.00	3.4	35.5	4	1.5	4	4	2.5	8	4	4	Fair	Ivy	Fair	C2	10 to 20 yrs	Fair	Ivy to stem. Epicormic at base, average diameter approximately 100mm. Overhang into site. Minor deadwood in crown. Generally unremarkable.
T10#	Common Ash	Semi-mature	NE 3	9	2	250.00	3.0	28.3	4.5	0	4.5	4.5	2.5	0	5	5	Fair	Fair	N/A	C2	10 to 20 yrs	Fair	Generally unremarkable. Growing amongst dense scrub. Basal area obscured. Ivy to one stem. Stem bifurcates at 1m. Crown skew.
T11#	Common Ash	Semi-mature	NW 0.5	12	1	380.00	4.6	65.3	5	5.5	5	4.5	3.5	3.5	4	4.5	Good	Ivy	N/A	B2	20 to 40 yrs	Fair	Growing amongst dense blackthorn. Heavy ivy to stem. Slight crown skew. No major defects. Epicormic growth in the crown.
T12#	Common Ash	Mature	E 3.5	13	3	583.10	7.0	153.8	7	7	7.5	7	2	2	4	4	Good	Fair	Fair	B2	20 to 40 yrs	Fair	Growing in the corner of the site. Three stemmed at 1.5m. Moderate pruning in the northern crown.

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^(m2)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS 5837 Category	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W							
T13#	Common Ash	Semi-mature	N/A	6.5	1	380.00	4.8	65.3	3	3	3	3	3.5	3	3	3	Poor	Poor	Poor	U	<10 yrs	Poor	Light ivy to the stem. Evidence of significant basal decay. Significant decay and hollowing to the main stem. Stem previously failed at approx 4m, crown now consistent of young regrowth. Should be retained for ecological value rather than removed - appears to be off-site, on boundary but immediately behind fencing (nailed to stem).
T14#	Common Ash	Mature	W 3.5	14.5	1	480.00	5.8	104.2	5	6	5	6	2.5	2	3	4	Fair	Poor	Poor	C1	10 to 20 yrs	Poor	Significant wound from limb loss, south-east at 3.5m. The wound has evidence of decay and extends down the face of the stem to the base, showing significant decay of the central column. Epicormic growth at the base approximately 100-120mm in diameter. A second wound with significant decay is present at the first significant branch attachment to the stem - potential hollowing alongside evidence of decay to the central column. Significant wounding and decay to one stem of epicormic growth, east. Pruning wounds to the upper stem and a small number of deadwood limbs exhibiting decay.
T15#	Common Oak	Mature	E 3.5	13	1	600.00	7.2	162.9	6	6.5	7.5	7.5	5	4.5	2.5	3	Fair	Good	Fair	B1,2	20 to 40 yrs	Fair	Significant wounding to the upper side of the first significant branch, deadwood extending from the branch. Light ivy to the stem. Pruning wound to a major limb, south at 5m, with evidence of decay. Considerable amount of moderate to major deadwood in the crown, with evidence of decay. Regrowth from large pruning wound west at 3m. Overhanging site.
T16	Common Oak	Young	N 2.5	9.5	1	160.00	1.9	11.6	3	2	3.5	3.5	2.5	4	2.5	2.5	Good	Good	Good	C1	20 to 40 yrs	Good	Young oak growing within the site, self set from boundary woodland. No major defects. Slight crown skew.

Group ID	Species	BS 5837 Category	Description
G1	Common Hawthorn, Blackthorn, Common Holly, Common Ash	C2	Boundary group spanning a large extent of the site. Average height 5-6m with taller individuals interspersed throughout. Areas of heavy ivy throughout. Mostly growing behind the boundary fencing, some encroachment into the site. Predominantly hawthorn and blackthorn with interspersed holly and young ash. Larger, dominant individuals in the group have been surveyed individually. Average stem diameter 150mm of single stemmed young ash, shrub species are smaller. Heavy bramble burden throughout.
G2	Common Hawthorn, Blackthorn, Common Holly, Common Ash	C1	Low quality, disjunct group along the northwestern boundary of the site. Gap for access gate. Narrow ditch between group and field. Average height 5m with taller young ash interspersed (max stem diameter 200mm approximately).
G3	Blackthorn, Common Ash, Common Hawthorn	C1	Low quality group of young ash, blackthorn and hawthorn. Delineated by electric wire fencing around the basal area. Maximum stem diameter approximately 150mm. Maximum height approximately 6m.
W1	Common Hawthorn, Common Oak, Common Ash, Common Holly, Silver Birch	B2	Mixed species woodland growing within a roadside verge to the northeast. Significant screening value against the main road. Average height 11-12m. The verge slopes up from the site to the road. Predominantly growing behind boundary wooden fence with a small number of trees just on site or growing through the boundary fence. Average stem diameter of more established individuals 250mm. Dominated by dense hawthorn along the boundary fence line. Predominantly semi-mature ash and young oak throughout the group. The sloped verge appears to depreciate at the eastern extent.

Appendix 2 – Tree Maps & Tree Protection Plan

Project Reference/Name:

BG22.188 Leicester Road, Markfield

Client:

Charterpoint (LE67) Limited

Drawing Title:

Location & Quality

Drawn By:

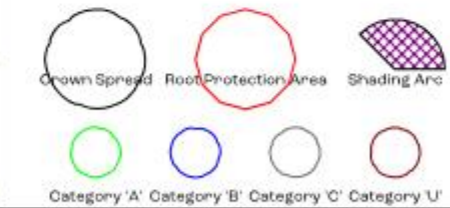
HR

Date:

02/11/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

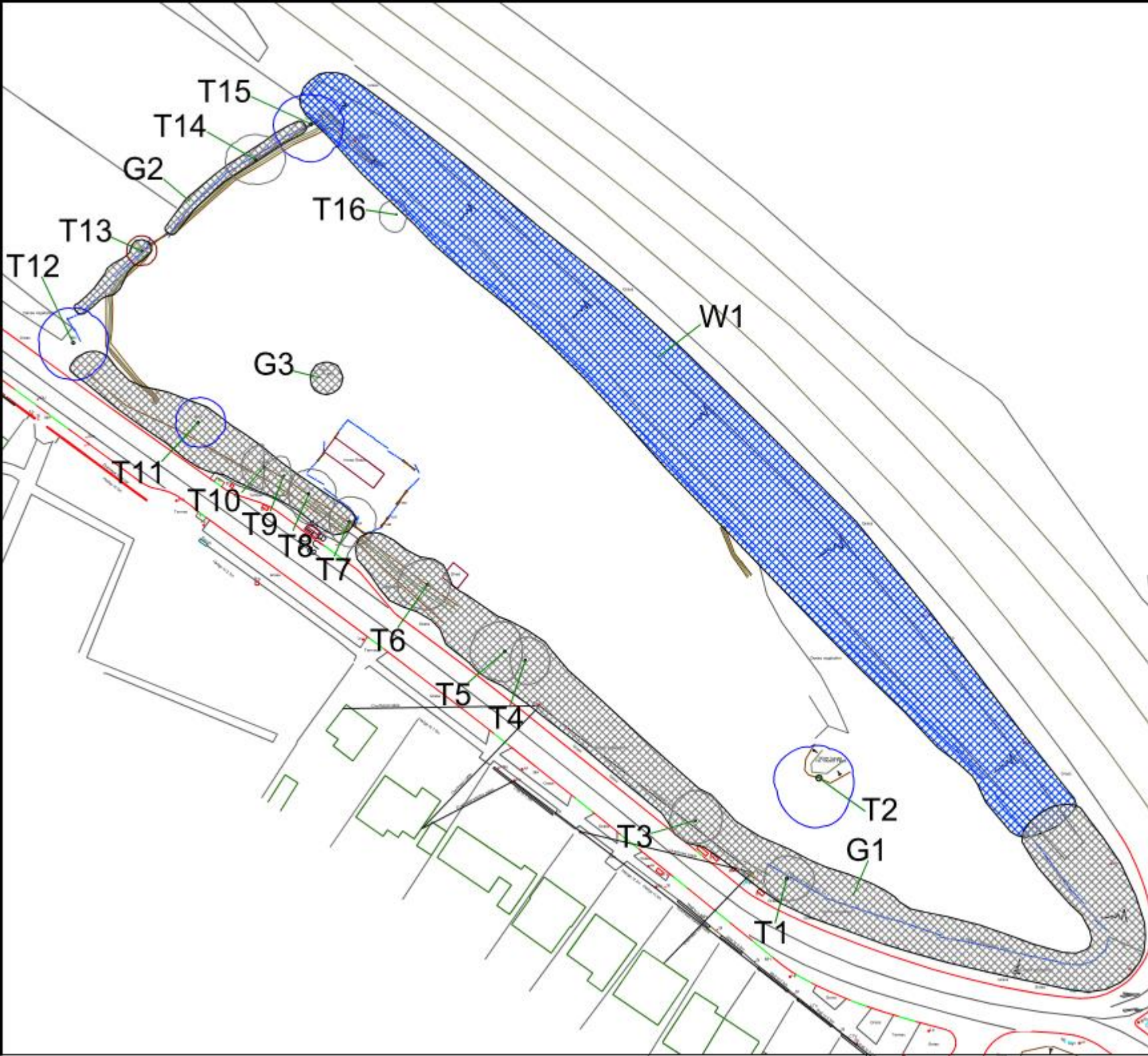


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Project Reference/Name:

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Client:

Charterpoint (LE67) Limited

Drawing Title:

Location & Quality (Plans Overlaid)

Drawn By:

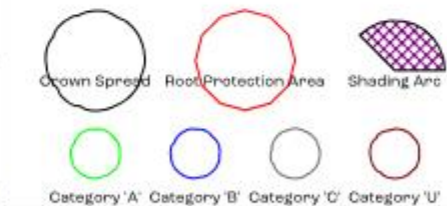
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Date:

27/10/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

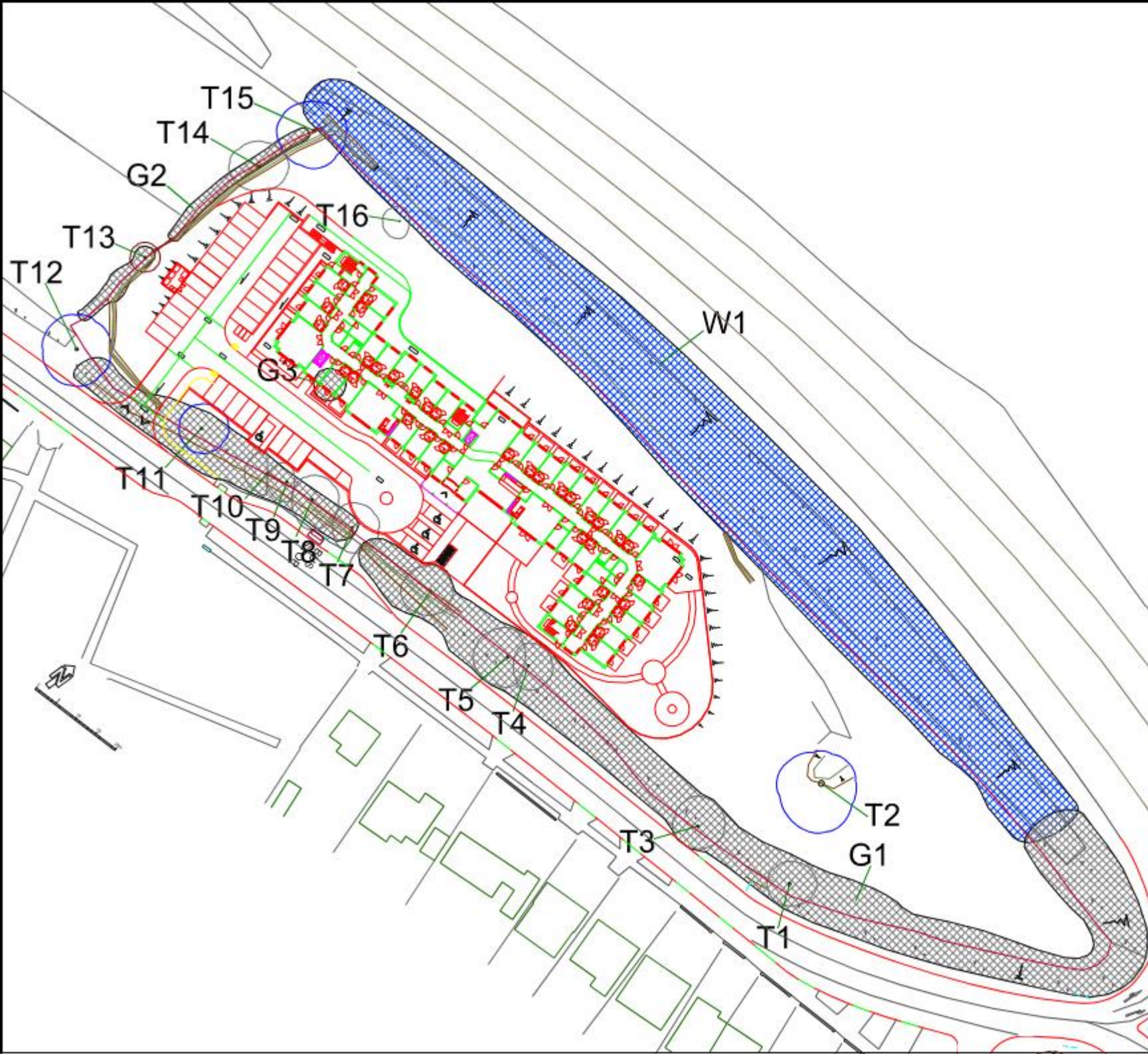


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Client:

Charterpoint (LE67) Limited

Drawing Title:

Shading

Drawn By:

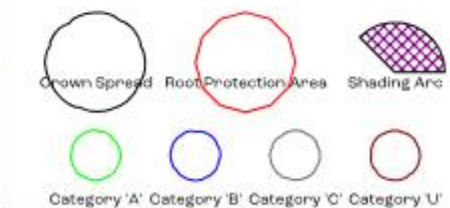
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Date:

02/11/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

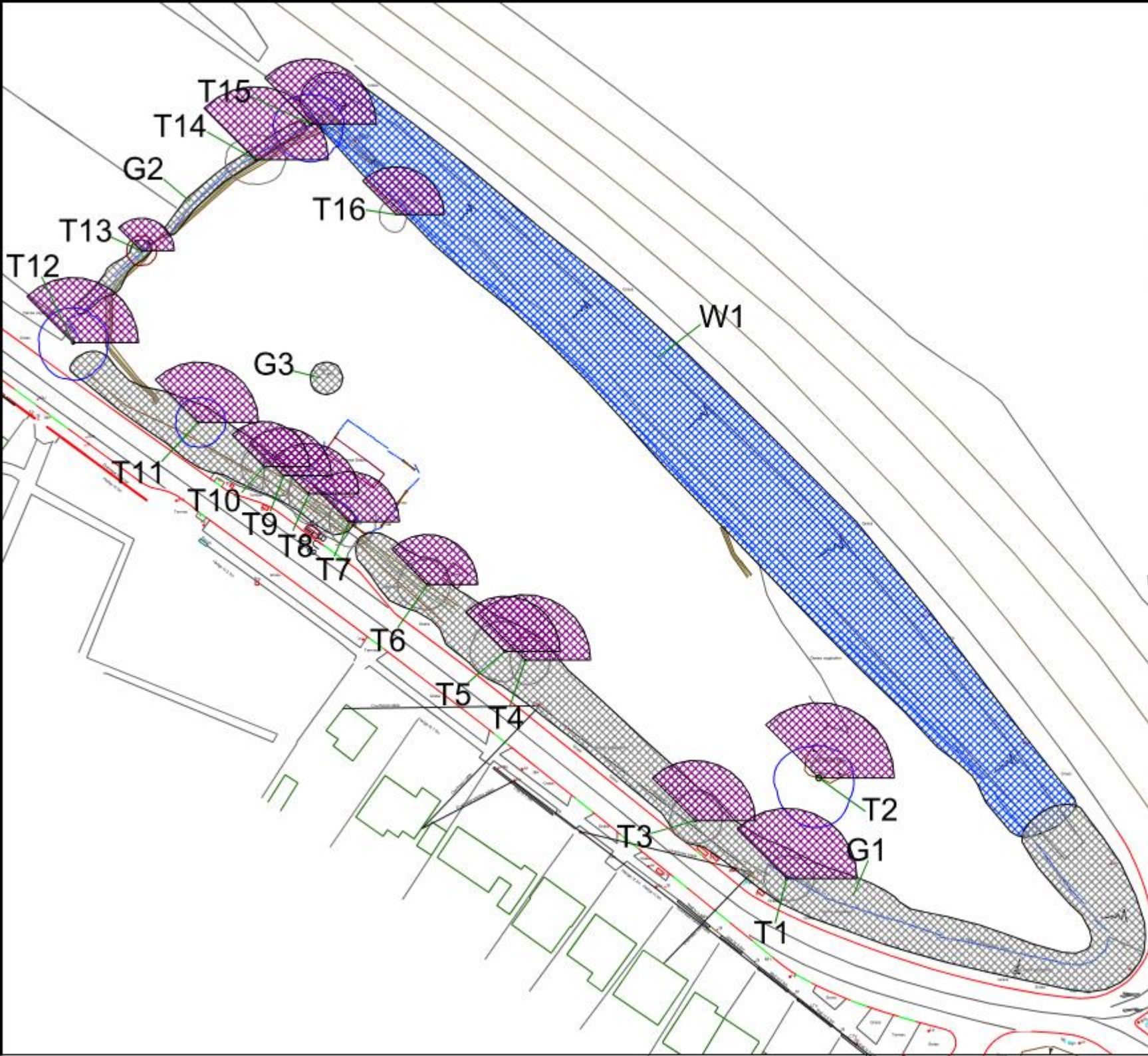


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Client:

Charterpoint (LE67) Limited

Drawing Title:

Shading (Plans Overlaid)

Drawn By:

HR

Date:

27/10/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

-  Crown Spread
-  Root Protection Area
-  Shading Arc
-  Category 'A'
-  Category 'B'
-  Category 'C'
-  Category 'U'



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Client:

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Drawing Title:

Root Protection Area (RPA)

Drawn By:

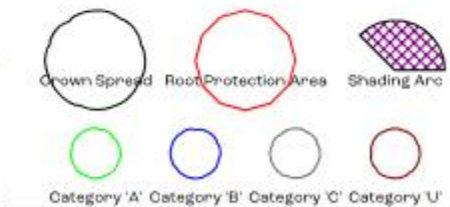
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Date:

02/11/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

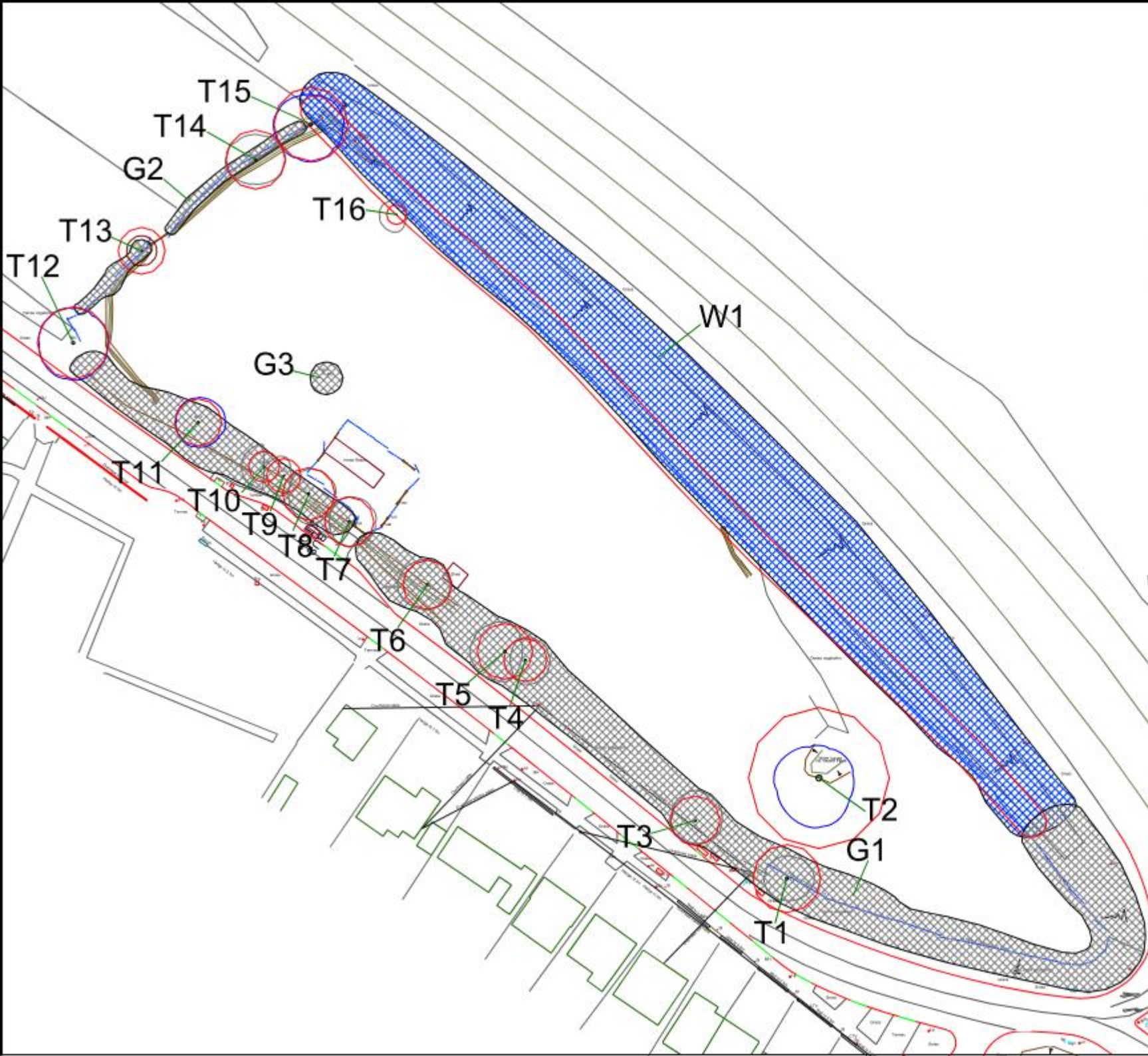


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Client:

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Drawing Title:

RPA (Plans Overlaid)

Drawn By:

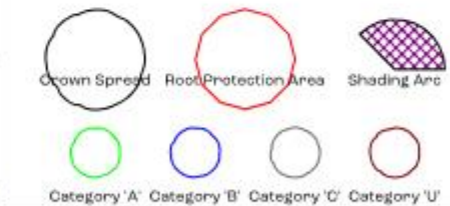
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Date:

27/10/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

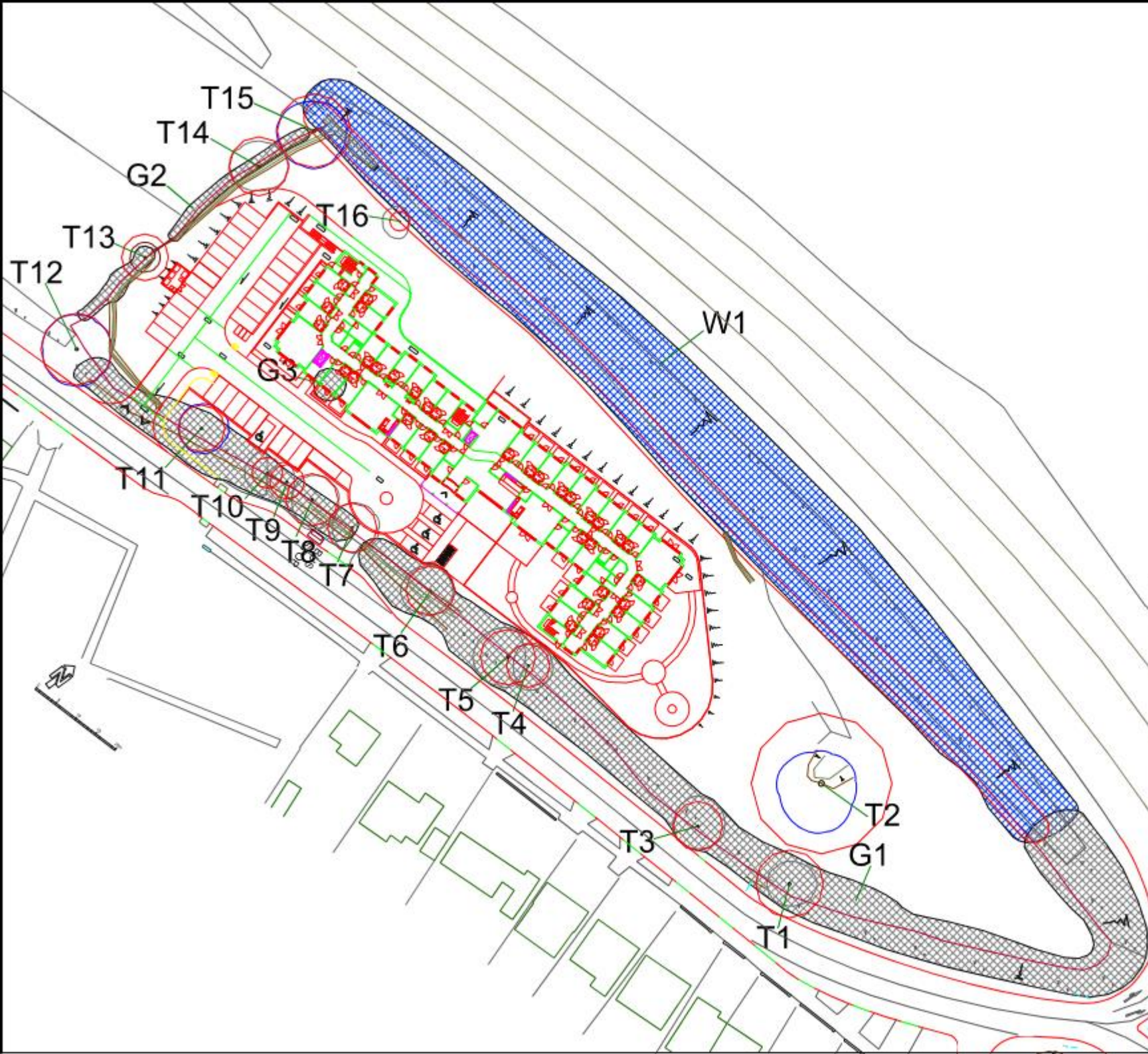


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Project Reference/Name:

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Client:

Charterpoint (LE67) Limited

Drawing Title:

Tree Protection Plan

Drawn By:

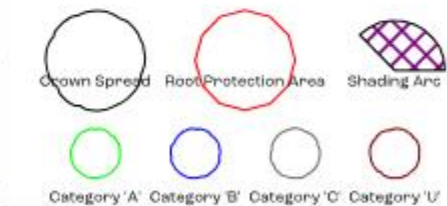
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Date:

27/10/2023

Legend:

-  Construction Exclusion Zone Fencing
-  Permanent Ground Protection
-  Temporary Ground Protection
-  Specialist Foundations
-  Trees Proposed for Removal

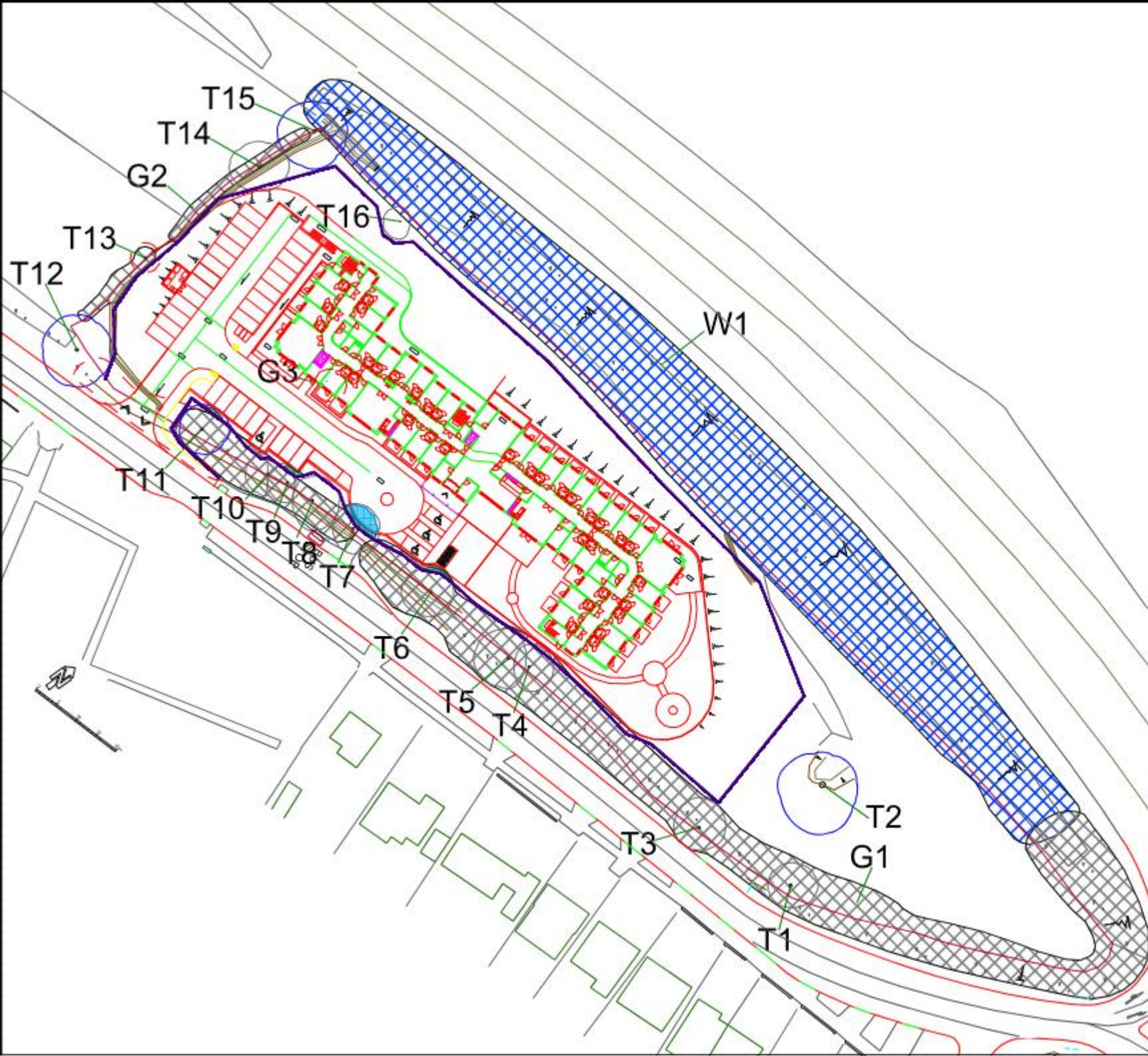


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Appendix 3 – Tree Protection General Guidance

Tree protection specification – protective fencing

The protective fencing used must be fit for the purpose of excluding construction activity.

The default fencing specification should be as per Figure 1 and comprise of a vertical and horizontal scaffold framework. The fencing must be a minimum of 2m tall and well braced to resist impacts. Upright scaffold poles must be driven into the ground by a minimum of 0.6m and spaced at maximum intervals of 3m. Onto this framework, welded mesh infill panels will be secured to the uprights and cross-members with wire ties. The fence should be supported on the inner side by bracing poles. Care must be taken when locating the bracing poles to avoid contact with structural roots.

When the site circumstances prevent the use of driven poles (e.g. due to existing hard surfacing), the fencing specification should be as per Figure 2. This will consist of 2m tall welded mesh panels (e.g. Heras) on rubber or concrete feet, with the mesh panels held together with a minimum of two anti-tamper couplers. Distance between the fence couplers should be at least 1m and uniform across the fencing. Stabiliser struts on the inner side of the fence should be attached to a base plate secured with ground pins (Figure 2a) or mounted onto a block tray (Figure 2b).

Tree protective fencing must have all-weather notices attached at regular intervals, such as those in Figure 3 and Figure 4. The notices must include wording such as 'CONSTRUCTION EXCLUSION ZONE – NO ACCESS' or 'TREE PROTECTION AREA – KEEP OUT'. The tree protective fencing must remain *in situ* and intact until completion of construction; they may be removed after agreement with the project arboriculturist and their removal discharged to the Local Planning Authority.

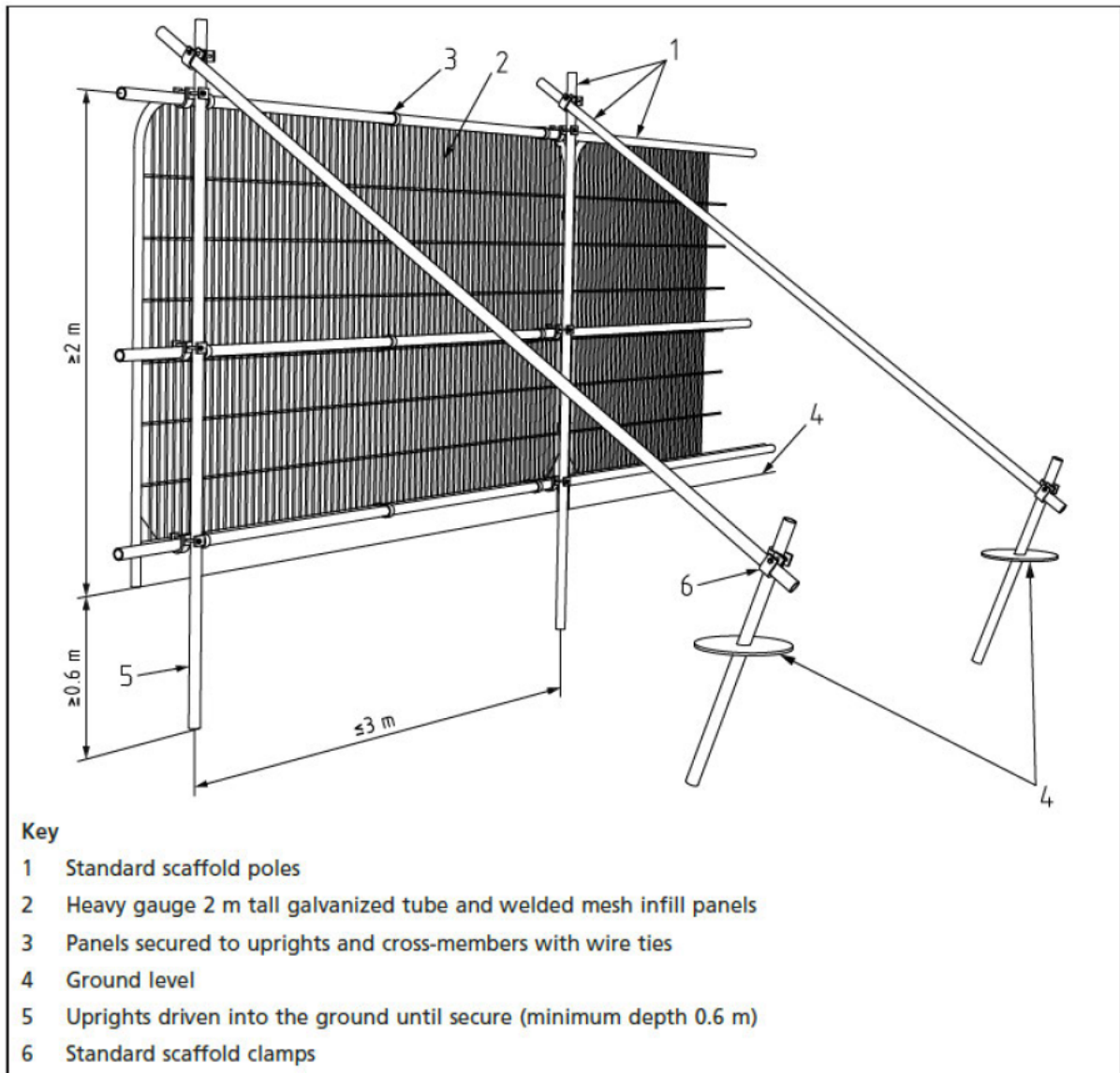


Figure 1: Default specification for tree protection fencing (Figure 2 in BS 5837:2012)

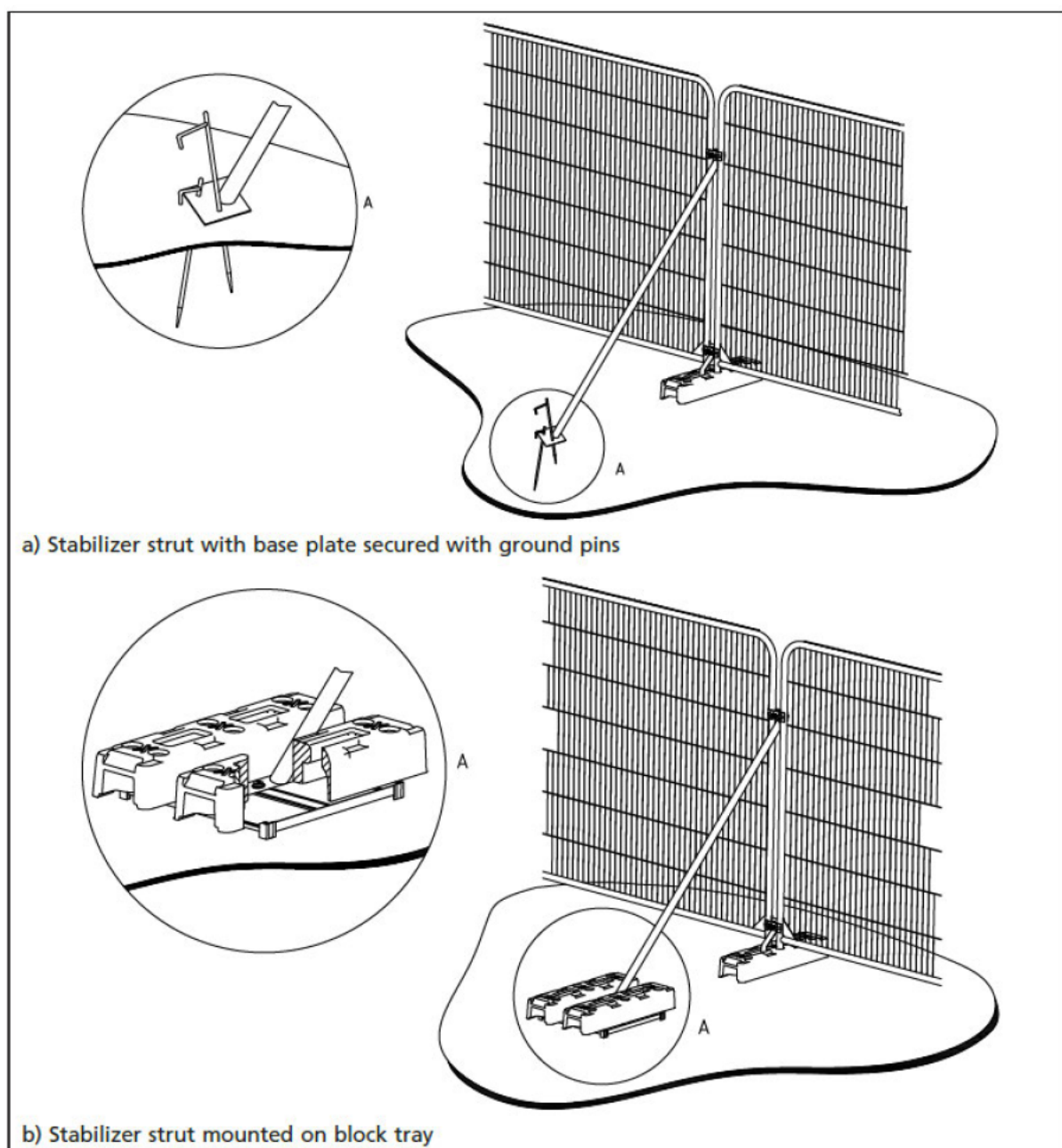


Figure 2: Alternative specification for tree protection fencing (Figure 3 in BS 5837:2012).



TREE PROTECTION AREA KEEP OUT!

(Town & Country Planning Act 1990)

**Trees enclosed by this fence are protected by
planning conditions and/or are the subjects of
a Tree Preservation Order.**

**Contravention of a Tree Preservation Order
may lead to criminal prosecution.**

**Any incursion into the protected area must be
with the written permission of the local
planning authority.**



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Figure 3: Tree protection fencing signage.



PROTECTIVE FENCING

Fencing must be maintained in accordance with the approved plans and drawings for this development



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Figure 4: Tree protection fencing signage.

Other considerations – statutory controls and wildlife

Statutory controls

Trees may be statutorily protected due to their location within a Conservation Area, or by a Tree Preservation Order (TPO). Brindle & Green Ltd have undertaken TPO and Conservation Area searches to inform this report, using Local Planning Authority online mapping services or by confirming directly with the LPA. The protection status of trees may change between the issuing of reports and the commencement of works onsite; therefore, it is strongly recommended that tree protection status is checked directly with the LPA prior to the commencement of any tree work onsite. Separate works applications to protected trees are not required provided that the works are specified in this report, that this report is submitted to the LPA as part of the planning application and that planning consent is granted.

Bats

Several British bat species will roost in trees. All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

Breeding birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

Vegetation clearance, including tree and hedgerow removal, during the period March to August can be damaging to active bird nests during the main breeding season. Vegetation clearance on site should ideally take place in the months September to February, outside of the main bird breeding season.

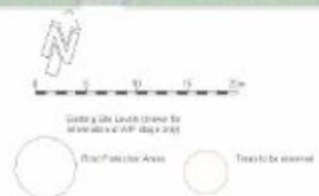
Any vegetation clearance proposed between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works. This should confirm whether all or some clearance is achievable. In addition to a pre-works check,

the clearance of vegetation between the months of March and September should be supervised by a suitably experienced ecologist.

Appendix 4 – Site Plans



GIA : 396m²
 GF : 1678m²
 FF : 1678m²
 Total : 3752m²
 (52m²/bed)
 Footprint : 1778m²



DRAWING STATUS
 PLANNING APPLICATION - DRAFT

REV	DATE	DESCRIPTION



PROJECT
 PROPOSED 72 BED CARE HOME
 LEICESTER RD, MARKFIELD

TITLE
 PROPOSED SITE PLAN



DCR	750003	DRG NO	2153/PA/003	REV	1
DATE	JUNE 22				
AUTHOR		FILE			

Appendix 5 – Site Photographs

Image	Description
Eastern Site Extent	
	A site photograph, taken facing east, with T2 located to the left and G1, T1 and T3 located right.
Western Site Extent	
	A site photograph of the western extent, with G1 located left, W1 located right, and G2 located in the central background.

Appendix 6 – General References

British Standards Institution, 1989. *BS 4428:1989 - Code of practice for general landscape operations (excluding hard surfaces)*. BSI Standards Limited.

British Standards Institution, 2010. *BS 3998:2010 - Tree work - Recommendations*. BSI Standards Limited.

British Standards Institution, 2012. *BS 5837:2012 - Trees in relation to design, demolition and construction*. BSI Standards Limited.

Mattheck, C., Bethge, K. & Weber, K., 2015. *The Body Language of Trees (Encyclopaedia of Visual Tree Assessment)*. Karlsruhe: Karlsruhe Institute of Technology - Campus North, a merger of Forschungszentrum Karlsruhe GmbH.

Roberts, J., Jackson, N. & Smith, M., 2018. *Tree Roots in the Built Environment*. 3 ed. London: The Stationery Office.

Rose, B., 2020. *The Use of Cellular Confinement Systems Near Trees: A Guide to Good Practice*, UK: Arboricultural Association.