



JULY 22, 2022

10 Stretton Way, Huyton L36 6JF
TREE SURVEY BS5837:2012

GUY SMALLTHWAITE

TREESURE

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1 SUMMARY

- 1.1 The proposed development is for an extension to the west of the existing building.
- 1.2 To prevent compaction and to protect the root radial areas of the trees, all trees will be afforded protection (see Arboricultural Method Statement and Tree Protection Plan). Such trees shall be retained and shall not be lopped, topped, felled, pruned, have their roots severed or be uprooted without prior approval of the Local Planning Authority.
- 1.3 There are two individual mature trees and three groups. The crack willow tree (T2) requires removal to facilitate the development, one limb has already failed. To create space for the development there will be a requirement for sections of trees from G1 and G3 to be removed and temporary ground protection to be laid to protect the roots of retained trees (please see the Tree Protection Plan – Appendix 2).

2 INTRODUCTION

- 2.1 Guy Smallthwaite is an Arboricultural Consultant with Treesure. He has been awarded a Foundation degree in Arboriculture with the University of Central Lancashire in conjunction with Myerscough College. He is a Professional Member of the Arboricultural Association. He has 20 years of experience within the industry.
- 2.2 Treesure have been instructed on behalf of Mr Windsor (Pine Precision Engineering) to produce a Tree Survey Plan in accordance with BS5837:2012. The survey was carried out on the 22nd of July 2022. The weather conditions were sunny with a light breeze.
- 2.3 For the purposes of carrying out the tree survey, Treesure were provided with the following documents: existing and proposed plans in PDF and CAD format.
- 2.4 This report details the arboricultural implication of development, recommendations and protective measures.
- 2.5 This report provides the results of the survey and includes:

- Tree Survey Schedule
- An Assessment of Tree Quality based on BS5837: 2012
- Arboricultural Impact Assessment
- Arboricultural Method Statement
- Tree Constraints Plan
- Tree Protection Plan

3 SCOPE AND LIMITATIONS OF THE SURVEY

3.1 The scope of the survey includes a visual inspection from ground level using the 'Visual Tree Assessment Methodology'. One site was surveyed. The brief was to conduct a Tree survey in accordance with BS5837:2012 Recommendations.

3.2 Any legal descriptions or information given by Treesure are understood to be accurate.

3.3 No responsibility is assumed by Treesure for legal matters that may arise from this report, and the consultant shall not be required to give testimony or to attend court unless subsequent contractual arrangements are made.

3.4 Any alteration or deletion from this report will invalidate it as a whole.

3.5 Trees are large dynamic organisms whose health and condition can change rapidly, therefore due to the changing nature of trees and other site considerations, this report and any recommendations made are only valid for a 1 year period.

3.6 Any operational practices recommended in this report are to be undertaken by the appropriate specialist company. Operatives are to carry out the relevant risk assessment and record such information, prior to commencement of tasks and work in accordance with current Health and Safety standards, practices and legislation.

3.7 The location of the trees was estimated using triangulation from fixed points.

4. SURVEY METHODOLOGY

- 4.1 The tree survey was carried out using the methodology set out in BS5837:2012 '*Trees in relation to design, demolition and construction – recommendations*'.
- 4.2 Tree canopies or branch spread was measured in four directions N-S-E-W using a Leica Disto. This gives an accurate representation of the tree crown.
- 4.3 Trunk diameters are measured at breast height in mm and rounded to the nearest 10mm.
- 4.4 Crown clearance is the existing height above ground level of the first significant branch along with its direction of growth (e.g. 3.5 – S). Measurements are recorded to the nearest half metre for dimensions up to 10m and the nearest whole metre for dimensions over 10m.
- 4.5 Height was measured using a Nikon Forestry Pro Laser Rangefinder. All were recorded to the nearest half metre for dimensions up to 10m and the nearest whole metre for dimensions over 10m. Stem diameter was recorded in millimetres and rounded to the nearest 10mm.
- 4.6 Photographs were taken on site recording any structural defects or decay/disease.
- 4.7 Life Stage is recorded as either Y- young, SM – Semi – Mature, EM – Early Mature, M – Mature or OM – Over Mature
- 4.8 Observations record the condition of the tree noting any decay/disease or physical defects
- 4.9 Category rating is given to all the trees surveyed. Category A (Green) Trees of high quality with an estimated remaining life expectancy of 40 years. Category B (Blue) - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Category C (Grey) - Trees of low quality with an estimated life expectancy of at least 10 years. Category U (Red) - Trees that are unsuitable for retention. Trees in

such poor condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

4.10 A, B and C trees are also given a sub – category of 1, 2 or 3 which reflects their arboricultural, landscape or cultural values respectively.

4.11 Life expectancy is the length of time that the tree is estimated to make a useful contribution is expressed in years as: <10, 10+, 20+, and 40+.

5.0 Proposal

The proposed development is for an extension to the west of the existing building.

6. TREE DETAILS

6.1 Land

Details of all the trees can be found in the Tree Survey Schedule in Appendix 1 and their location can be found on the Tree Constraints Plan in Appendix 2. All trees are to be protected in accordance with BS: 5837 (2012) guidelines.

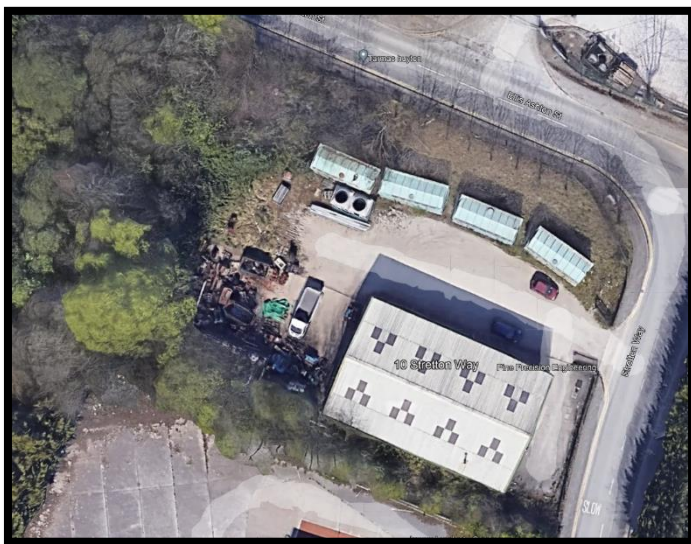


Fig 1. Aerial view of 10 Stretton Way.

6.2 Statutory Protection

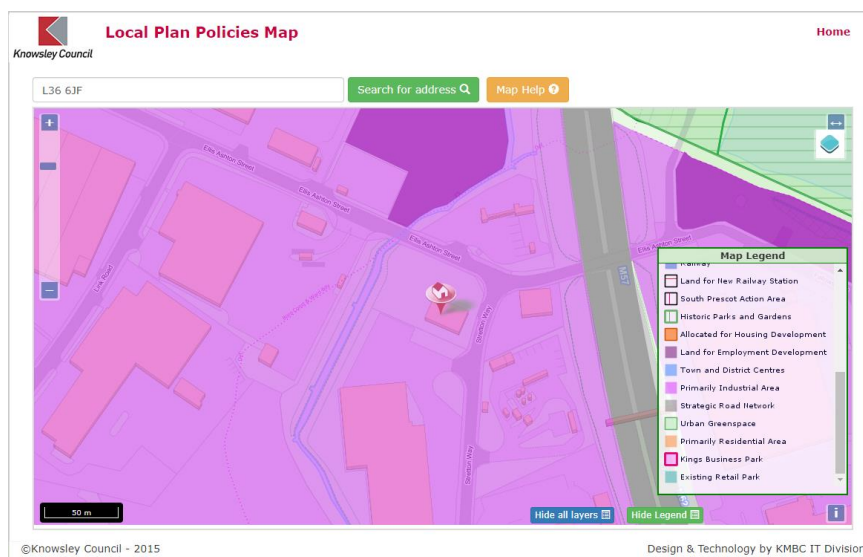


Fig 2. Knowsley Council interactive mapping system indicates that the trees on site are not protected by Tree Preservation Orders and the site is not within a Conservation Order.

7. Legal Protection for Wildlife

7.1 Any tree work should be undertaken outside of the nesting season (1st March – 31st July inclusive), although the nesting period may start before this and extend beyond it, in many cases (e.g., barn owls can breed at any month of the year in the UK). This is to avoid impact to nesting birds and infringement of the Wildlife and Countryside Act 1981.

7.2 The quality and value of the tree stock has been broken down by BS5837 quality grade in Table 5.4 below. The grading system can be summarised as follows: For a tree to qualify under any given category, it should fall within the scope of that category's definition (U, A, B, C) and for trees in categories A to C, it should qualify under one or more of the three subcategories (1, 2, and 3). Subcategories 1, 2 and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively.

Table 7.3 Quality of Existing Trees (Removal and Retention)

Total No of Individual Trees	A Grade	B Grade	C Grade	U Grade
No of Individual Trees	NA	1	1	0
Remove	NA	0	1	NA
There are three groups of trees. Sections of G1 and G3 require removal to facilitate the development and allow for working space (please see the Tree Protection Plan).				

8.0 Soil Details

The visual soil assessment revealed freely draining slightly acid sandy soils. This concurs with the British Geology Viewer - Pennine Middle Coal Measures Formation - Sandstone. Sedimentary Bedrock formed approximately 310 to 318 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

9.0 Plates



Plate 1. Mature alder tree located close to the south west corner of the proposed extension.

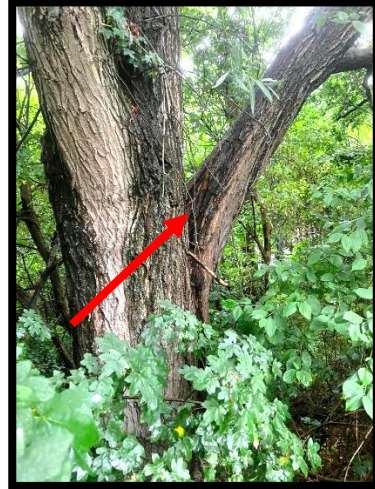


Plate 2. Failed limb on crack willow tree suspended on neighbouring trees.



Plate 3. A group of trees (G2) located close to the west boundary.



Plate 4. Group of broadleaved trees (G3) behind containers, adjacent to north boundary.

10. Arboricultural Impact Assessment

The purpose of the assessment is to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of the site layout proposals.

10.1 Site access

The proposed site access point would be directly off the existing entrance.

10.2 Tree protection during excavation

Before any building works commence it is essential that all tree protection fencing is in place to protect the root protection areas. The proposed extension incurs into the RPAs of T1, G1 and G3. There is a requirement for a restricted working space within the protected area. The line would need to be 1.5m from the edge to allow for barriers and working space. This is approximately 1.5m from the edge of the RPA line. Any access within the 1.5m of exposed RPA would be limited to pedestrian access only. For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100mm depth of woodchip), laid onto a geotextile membrane.

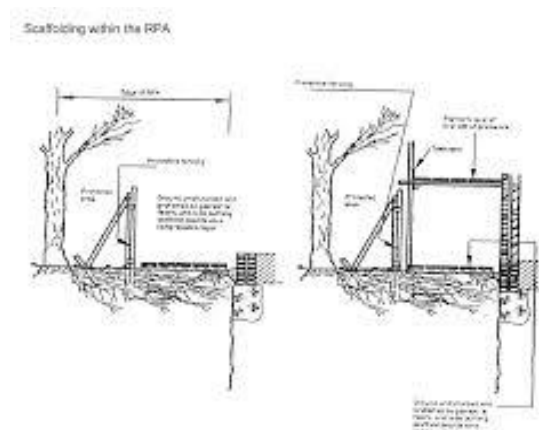


Fig 3. Protective boards and scaffolding to be installed

10.3 Protection of Retained Trees

The successful retention of trees depends on the quality of protection and the procedures that are set in place to ensure that trees are protected. An Arboricultural Method Statement is an effective means of ensuring this protection. Details are set out in the Method Statement in section 11.

10.4 Development will be carried out in the following order:

- Tree protection fencing
- Temporary Ground Protection
- Development of site
- The removal of Tree Protection Fencing and Temporary Ground Protection

10.5 Tree Dominance Zone

If new trees are to be planted for screening or boundary it is important that the land is assessed to determine where new trees will not be subject to post development pressure for planning or removal. Consideration needs to be given to their ultimate height and spread, form, habit and colour, density of foliage and maintenance implications. It is advisable that new tree planting is kept at distances from structures of at least those in Table A.1 (see BS5837:2012). BS 4428:1989 contains recommendations and guidance on general landscape operations, with sections on preliminary investigations, drainage, grading and cultivation, tree planting, and woodland planting. Establishment of new planting can be maximised by good planting practice.

11 ARBORICULTURAL METHOD STATEMENT

- 11.1 The information contained within the Arboricultural Method Statement conforms to BS5837:2012. The controlling authority is Knowsley Council.
- 11.2 For details of the trees to be retained, their location, ground protection and Tree Protection Fencing, reference should be made to the Tree Protection Plan.
- 11.3 Any development activity which affects the adaptation of trees to a site could be detrimental to their health, future growth and safety. Tree species differ in their ability to tolerate change, but all tend to become less tolerant after they have reached maturity or suffered previous damage. Planning and subsequent site management aims need to minimise the effect of change.
- 11.4 The implementation, supervision and monitoring of a Tree Protection Plan is necessary to ensure the continued well- being of trees and to comply with BS583:2012.

12.0 Schedule of Specific Site Events

- 12.1 Whenever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site monitoring. Effective tree protection relies on following a logical sequence of events and arboricultural inspection and supervision

12.2 Pre- Commencement meeting

Before any start to development a meeting should be scheduled with the site manager, tree officer and the arboricultural consultant. The extent of the tree constraints will be discussed. Working space requirements will be reviewed to consider barrier and ground protection with regard to site functionality. Any potential conflicts should be addressed and a resolution worked towards.

12.3 Tree Works

All tree works are to be carried out before there is any commencement of work for reasons of public safety and adhere to recommendations set out in BS: 3998 (2010)

12.4 *Schedule of Specific Site Events (Table 12.4)*

Stage	Action	Involved parties	Reference
1	Issue Arboricultural survey to site manager	Client/Contractor	N/A
2	Pre-development meeting	Client/Contractor	N/A
3	Pre-development meeting	Site Manager	N/A
4	Installation of Tree Protection Fencing and Temporary Ground Protection	Contractor	13.0
5	Development	Contractor	10.0
6	Remove Tree Protection once development is completed	Contractor	N/A

13.0 TREE PROTECTION PLAN

13.1 In accordance with BS5837:2012 the Tree Protection Plan is superimposed on to the proposed site layout plan and based on the topographical survey. In addition, the Tree Protection Plan shows the following information accompanied by descriptive text as required.

13.2 The Tree Protection measures shown in the Tree Protection Plan demonstrate the feasibility of the proposed development in relation to the retained trees. The tree Protection Plan must always be read in conjunction with the Arboricultural Method Statement (see attached Tree Protection Plan).

13.3 *Construction Exclusion Zones*

Construction exclusion zones are fenced areas of the site that protect soil, surfaces and roots in the proximity of retained trees. The area of these zones (the root protection

area) is calculated as an area equivalent to a circle with a radius 12x the stem diameter in accordance with Annexe C and determined from Annexe D in the BS standards.

14.0 TREE PROTECTION FENCING

14.1 All trees that are being retained on site should be protected by barriers and /or ground protection before any materials or machinery is brought on to the site and before any demolition or development. The barrier fencing to be used would be the default type which has uprights that are driven into the ground (see Tree Constraints Plan or Fig 2 in BS5837:2012 guidelines) All weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE- NO ACCESS"

14.2 Stages for installation of Tree Protection Fencing

- Hand clearance of any vegetation to allow clear working access
- Setting out of fencing
- Site meeting with arboriculturist to sign off Tree Protective Fencing
- Site now accessible for vehicular access

14.3 Once installed Tree Protection Fencing will be regarded as sacrosanct and not removed without approval of the Local Planning Authority.

14.4 Protective fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subject to legal action.

15.0 Precautions inside the Construction Exclusion Zone

- No mechanical excavation
- No excavation without arboricultural site supervision
- No hand digging without a written method statement approved by the arboriculturist
- No lowering or raising of levels
- No storage of plant or materials

- No storage or handling of any chemicals including waste from cement mixing
- No vehicular access

15.1 Underground services

15.2 Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. Wherever possible apparatus should be routed outside Root Protection Areas. Where this is not possible it is preferable to keep apparatus together in common ducts. Inspection Chambers should be sited outside the Root Protection Areas. NJUG guidelines for the planning, installation and maintenance of utility services in proximity to trees can be followed.

16.0 PRECAUTIONS OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

16.1 Planning of site operations should take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweight. Such contact can result in serious damage to the trees and might make their safe retention impossible.

16.2 Fires on site should be avoided.

16.3 Material whose spillage could cause damage to a tree should be stored and handled away from the outer edge of the RPA, downhill and at least 10m away.

17.0 CONCLUSION

17.1 Providing that the methodology prescribed on this Arboricultural Method Statement and Tree Protection Plan is strictly adhered to I would expect there to be no harmful effects on the retained trees, their health and condition should be as if there had been no development.

17.2 Contact Details for all Relevant Parties

Name	Contact Details
KJP ARCHITECTURE	0151 342 2779
KNOWSLEY METROPOLITAN BOROUGH COUNCIL	0151 489 6000
GUY SMALLTHWAITE (ARBORICULTURAL CONSULTANT)	0151 336 5060 /07765195443

18. REFERENCES

BS5837:2012 Trees in Relation to Design Demolition and Construction

BS4428:1989 Code of Practice for General Landscape Operations

Patch D, Holding B. 2007. Through the Trees to Development APN 12. Arboricultural Advisory and Information Service.

Appendix 1

Survey Schedule

Classification Key

SURVEY SCHEDULE COMPLIANT TO BRITISH STANDARD 5837: 2012 DATE 27/07/2022													
Ref No	Species	Height (m)	Stem diameter (mm)	N	S	E	W	First sig branch and direction (m)	Canopy height (m)	Life stage	Estimated remaining contribution (years)	Category Grading	Observations and Management recommendations
T1	Alder <i>Alnus glutinosa</i>	14m	500mm	5	6	6	6	4m (S)	3	M	20+	B2	Tree in good condition with no apparent defects.
T2	Crack Willow <i>Salix fragilis</i>	17m	750mm	9	8	7	5	1m (N)	1	M	10+	C2	A large multi stemmed, mature tree with a weight bias east. One stem has failed and is suspended in neighbouring trees. Removal required to facilitate the development
G1	Alder <i>Alnus glutinosa</i> Dogwood <i>Cornus sanguinea</i>	14m	160mm	1	1	1	1	NA	1	Y- S/M	10+	C2	A group of young to semi-mature trees which are predominantly alder. All healthy with no apparent defects. A small section will require removing to facilitate the development.
G2	Field Maple <i>Acer campestre</i> Ash <i>Fraxinus excelsior</i> Crack Willow <i>Salix fragilis</i> Dogwood <i>Cornus sanguinea</i> Rowan <i>Sorbus aucuparia</i> Lime <i>Tilia x europaea</i>	14m	220mm	2	2	2	2	NA	1	Y- S/M	NA	C2	A group of young to semi-mature broadleaved trees which appear healthy with no defects.

G3	Goat Willow <i>Salix caprea</i> Alder <i>Alnus glutinosa</i> London Plane <i>Platanus x hispanica</i>	14m	220mm	2	2	2	2	NA	1	Y- S/M	10+	C2	A group of young to semi-mature trees which are predominantly a line of plane trees adjacent to the north boundary fence. All healthy with no apparent defects. A minor section will require removing to facilitate the development.
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Key: Survey Classification key

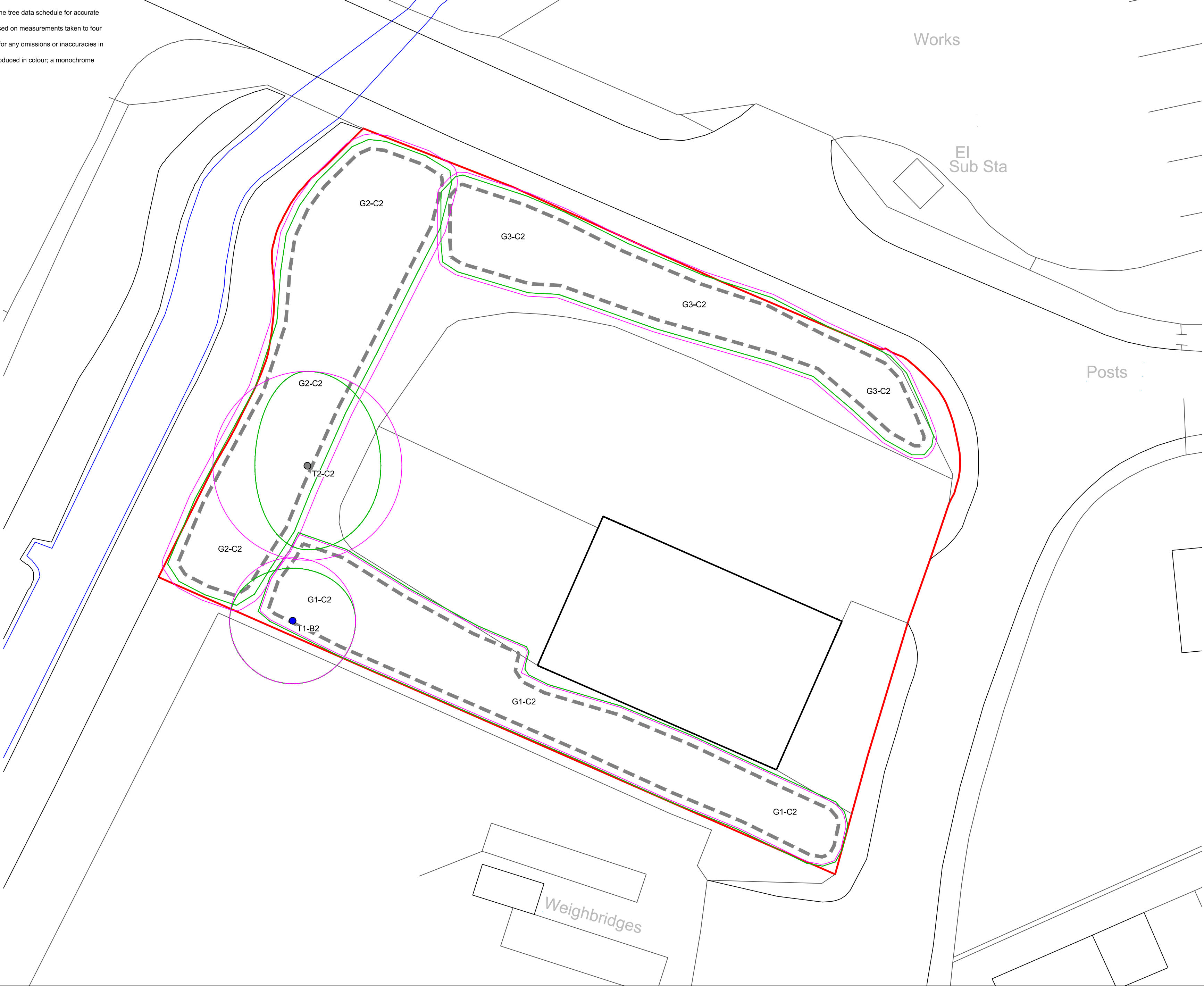
Tree no.	Numerical reference for tree on survey plan and tag number
Species.	Scientific name and common name
Height	In metres
RPA	Root Protection Area
TPP	Tree Protection Plan
TCP	Tree Constraints Plan
Stem diameter	In millimetres
Branch spread	Branch spread in metres taken at four cardinal points to give an accurate representation of the crown
First significant branch and direction	First large limb and its cardinal direction
Canopy	Clearance in metres until the start of the canopy
Life stage	Y = Young MA = Middle Aged M = Mature OM = Over Mature V = Veteran
Estimated remaining contribution	This is measured in years (<10, 10+, 20+, 40+)
Category rating	Category A (Green) Trees of high quality with an estimated life expectancy of at least 40 years Category B (Blue) Trees of moderate quality with an estimated remaining life expectancy of at least 20 years Category C (Grey) Trees of low quality with an estimated remaining life expectancy of at least 10 years Category U (Dark Red) Tree of such condition that cannot be realistically retained
Subcategories	1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation
Observations	Structural and physiological condition
Management recommendations	Remedial work needed to either improve the condition of the tree or to protect the canopy from access during development

APPENDIX 2

TREE CONSTRAINTS PLAN

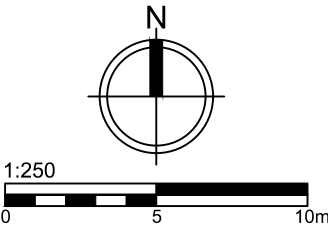
TREE PROTECTION PLAN

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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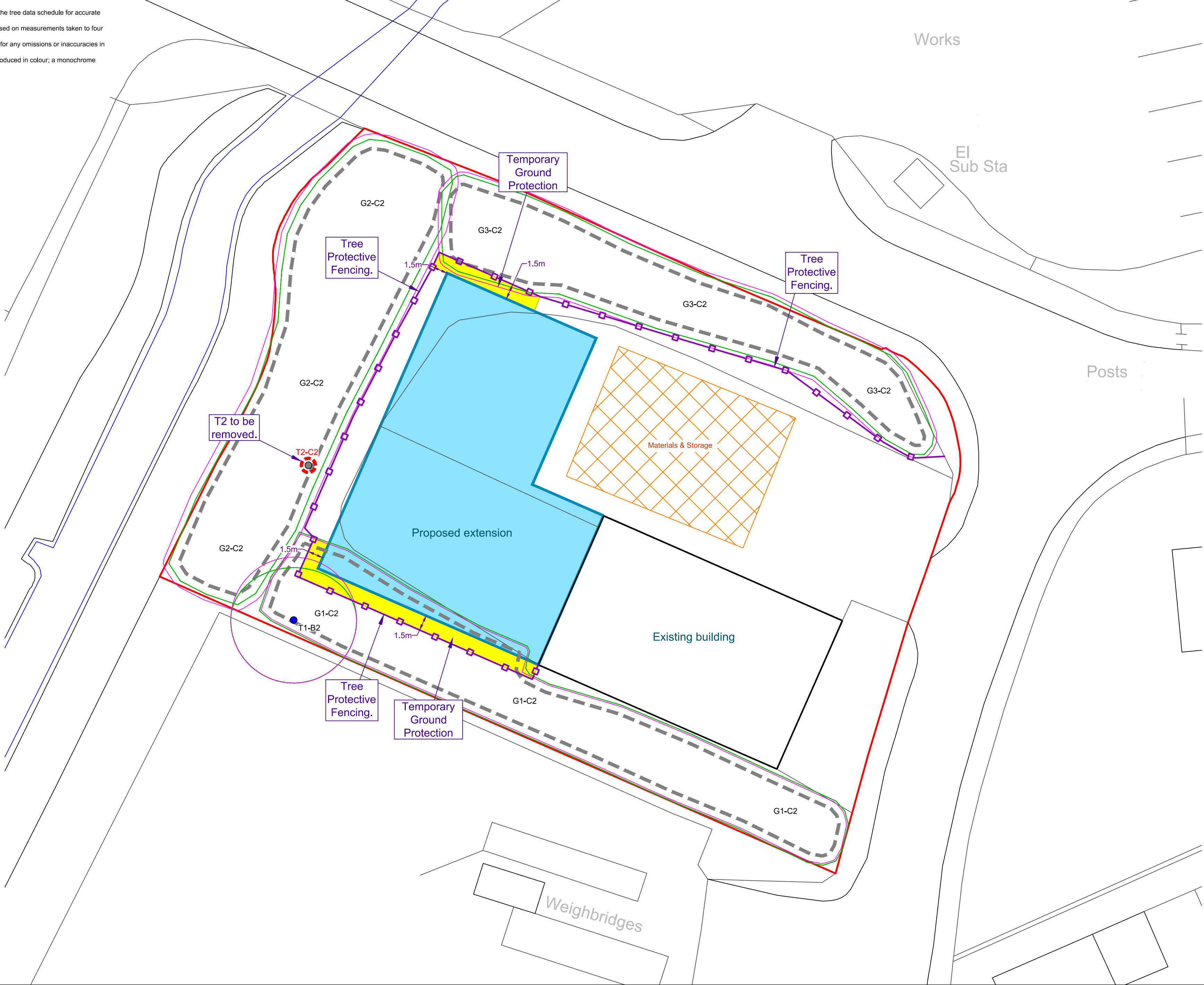
Key

- Trees
Showing Canopy extents, category colour and tag number (with category).
- Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- Category C
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.
- Category U
Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.
- Tree Groups
Shown as dashed centre/boundary line. Colour represents category (see above)
- BS 5837:2012 Root Protection Area



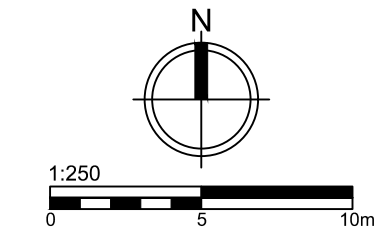
Drawing Title			
Tree Constraints Plan			
Client			
Mr Windsor			
Site/Project			
Pine Precision Engineering, 10 Stretton Way, Huyton L36 6JF			
Scale/Sheet		Date	
1:250 - A2		25/07/2022	
Drawing No	Rev	Drawn By	Chk'd By
TS_TCP_25_7_22	1	CS	GS
Treesure Arboricultural and Ecology Consultants.			
The Old Chapel, Orchard Lane, Puddington, Wirral CH64 5SG. Tel: 0151 353 8453 Mob: 07765195443			

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- Tree Groups
Shown as dashed centre/boundary line. Colour represents category (see above)
- BS 5837:2012 Root Protection Area
- Tree Protective Fencing
- Trees for Removal
- Ground Protection
- Materials Storage Area



Drawing Title
Tree Protection Plan

Client
Mr Windsor

Site/Project
**Pine Precision Engineering,
10 Stretton Way, Huyton L36 6JF**

Scale/Sheet
1:250 - A2

Date
26/07/2022

Drawing No
TS_TPP_26_7_22

Rev
1

Drawn By
CS

Chk'd By
GS

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