

Arboricultural Impact Assessment

FB Fabrication, Bryn Lane, Wrexham Industrial Estate

Prepared for:

JB FABRICATION

Our Ref: 23/AIA/WXM/310

January 2023

Tree Solutions Ltd

T: 01244 389114

E: info@tree-solutions.co.uk

W: www.tree-solutions.co.uk

Contents:

1.0	Instruction
2.0	Statutory Controls & Planning Policy
3.0	The Site
4.0	Development Proposal
5.0	General Constraints Data – Construction Exclusion Zones
6.0	Survey Methodology
7.0	Juxtaposition of Trees & Structures
8.0	Development Impact to Trees
9.0	Proposed Revisions
10.0	Conclusions
11.0	Limiting Conditions

<i>Appendix 1</i>	Tree Survey Schedule
<i>Appendix 2</i>	Preliminary Tree Constraints Plan
<i>Appendix 3</i>	Arboricultural Impact Plan

1.0 INSTRUCTION

- 1.1 We have been instructed by JB Fabrications to carry out an Arboricultural Impact Assessment (AIA) in order to assess the development proposal in relation to trees in accordance with the principles of British Standard 5837 'Trees in Relation to Design, Demolition & Construction - Recommendations' 2012.
- 1.2 We are instructed to prepare a report in order to provide information to assist all parties involved in the planning process to make balanced judgements regarding arboricultural features in relation to the proposed development at JB Fabrications, Bryn Lane, Wrexham Industrial Estate. As such, all trees within influencing distance to the development proposal both on and adjoining the site have been surveyed and are listed within a Tree Survey Schedule (**Appendix 1**) and plotted on all accompanying plans.
- 1.3 The stage 1 tree survey was carried out on 13 January 2023 by Alistair Henderson, Principal Consultant to Tree Solutions Ltd. Our appraisal of the mechanical integrity of trees on the site is enough to inform the current project. The assessment of trees is carried out from ground level without invasive investigation and the disclosure of hidden defects cannot therefore be expected. Whilst the survey is not specifically commissioned to report on matters of tree safety, we report obvious defects that are significant in relation to the existing and proposed land use. We do not carry out detailed safety inspections unless specifically instructed to do so in writing and have not carried out such inspections of trees on the proposal site.
- 1.4 Ten individual trees (T1–T10) and one group (G1) were surveyed and mapped on a Preliminary Tree Constraints & Impact Assessment Plan Ref: 23/AIA/WXM/310, Drawing No. 1 & 2 at **Appendix 2**. All arboricultural information recorded during the survey is presented within a schedule at **Appendix 1**.
- 1.5 The Arboricultural Impact Assessment is based on layout plan Ref: JD/PD/05 (Rev A) provided by HDS Architectural Services.

2.0 STATUTORY CONTROLS

- 2.1 We have been unable to ascertain if any trees are subject to a Tree Preservation Order or if the land falls within a designated Conservation Area. As the trees are young and the land is within an industrial estate, we would suggest that they are not protected.

2.2 Protected Species

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

2.3 Wildlife Habitats

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

3.0 THE SITE

- 3.1 Industrial fabrication units with associated service yard, office building and staff car park.

4.0 DEVELOPMENT PROPOSAL

- 4.1 Extensions and alteration to existing industrial unit.

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

5.1 GENERAL

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

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

CEZ's are explained below:

5.2 CEZ 1: ROOT PROTECTION AREA (RPA)

5.2.1 The RPA, calculated in m², should be protected before and during any demolition/construction works. This ensures the effective retention of trees by safeguarding a reliable quantum of functioning tree roots. The RPA is based on a radial measure from the centre of the tree stem, which is calculated by multiplying the stem diameter by a factor of twelve or by the (mean stem diameter²) x number of stems for multi-stemmed trees.

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

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

5.3 CEZ 2: TREE CROWN PROTECTION ZONE

5.3.1 N/A as the trees are all young to semi-mature.

5.4 CEZ 3: TREE DOMINANCE ZONE

5.4.1 N/A due to nature of application being for new industrial unit

5.5 CEZ 4: NEW PLANTING ZONE

5.5.1 No new tree planting is proposed or required.

6.0 SURVEY METHODOLOGY

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

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

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

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

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

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

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

6.2 SOIL ASSESSMENT

- 6.2.1 N/A due to nature off application and foundations/floor slab have already been installed.

7.0 JUXTAPOSITION OF TREES AND STRUCTURES

7.1 Below ground constraints

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

7.2 Underground Services

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

8.0 DEVELOPMENT IMPACT TO TREES

- 8.1 No trees require removal in order to install the new boundary palisade fence or construct the proposed extension to the industrial unit. Minor crown lifting may be required to G1 to facilitate the fence panels where required.
- 8.2 The existing storage containers located to the west of G1 will remain in situ until the extension has been completed whereby preventing any chance of construction damage to the trees and negating the need to erect 'Heras' fencing. The trees to the south are beyond the storage area and well clear of any proposed development.
- 8.3 The only vegetation to be cleared is a low-grade Leyland Cypress hedge that is of no amenity of landscape value to the area.



P1 – Floor slab for proposed extension to existing industrial unit



P2 – T1-T10



P3 – G1 with storage containers



P4 – Storage containers prevent any encroachment to G1



P5 – G1 tree to south of existing storage yard



P6 – Insignificant Leyland Cypress hedge to be removed

9.0 PROPOSED REVISIONS TO THE SCHEME

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

10.0 CONCLUSIONS

- 10.1 BS 5837: 2012 contains clear and current recommendations for a best practice approach to the assessment, retention and protection of trees on development sites. The proposed development has followed this guidance by:
- Seeking arboricultural advice and undertaking a phase 1 preliminary tree survey in order to inform the layout and design of the proposed development
 - Acting upon arboricultural advice throughout the design process in order to obtain the best development proposal whilst considering the current and future tree requirements
 - No trees are to be removed to accommodate the works and none are adversely impacted
 - Taking the above into consideration, we can see no valid arboricultural grounds for refusal

11.0 LIMITING CONDITIONS

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

Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	JB FABRICATIONS, BRYN ROAD, WREXHAM INDUSTRIAL ESTATE
CLIENT:	JB FABRICATIONS (WREXHAM) LTD
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A HENDERSON
ASSESSMENT DATE:	13/01/2023
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	23/AIA/WXM/310

PAGE 1 OF 2

TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA.(mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
T1	Hawthorn	EM	6	2	1	1.5	2	160	G	Small tree with asymmetric crown form due to proximity to T2 E.R.C. 10	No works	C2	1.9 12m²
T2	Lilac	EM	5	1.5	2.5	2.5	3.5	150	G	- Low quality tree with basal decay - E.R.C. 0	Recommend coppicing or remove & replace	C1	1.8 10m²
T3	Cherry	EM	4.5	1	2	2.5	3	240	M	- Twin stem. Stem to north removed leaving stump with decay - Stem to south leans 45° south of vertical - Unattractive specimen - E.R.C. 0	No works	C3	2.9 26m²
T4	Maple	EM	8	1.5	1.5	3.5	2.5	260	G	- Part of closed canopy linear group - No obvious defects - Collectively attractive landscape feature to locale - E.R.C. 20	No works	B2	3 31m²
T5	Maple	SM	7	2	2	2.5	3	240	G	As T4	No works	B2	2.9 26m²
T6	Maple	SM	7	2	2	2.5	3	210	G	As T4	No works	B2	2.5 20m²

HEADINGS & ABBREVIATIONS

TREE NO.

SPECIES:

AGE RANGE/LIFE STAGE:

HEIGHT:

CROWN SPREAD:

CROWN CLEARANCE & DIRECTION OF GROWTH:

STEM DIA/MULTI-STEM DIA:

VITALITY:

E.R.C. = ESTIMATED REMAINING CONTRIBUTION:

BS 5837 CATEGORY & SUB-CATEGORY GRADING:

BS 5837 RADIUS & BS 5837 RPA:

REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE (T = TREE, G = GROUP, H = HEDGE)

COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST)

Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE

ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE MEASURED USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES

MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP)

HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING)

STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES

A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, G = GOOD

RELATIVE USEFUL LIFE EXPECTANCY (YEARS)

A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION (SUB-CATEGORY REFERS TO ARBORICULTURAL, LANDSCAPE AND CULTURAL/CONSERVATION VALUES)

PROTECTIVE DISTANCE - RADIUS FROM THE CENTRE OF THE STEM TO THE LINE OF TREE PROTECTION (CONSTRUCTION EXCLUSION ZONE - CEZ) AND PROTECTIVE BARRIER ROOT PROTECTION AREA - BS 5837 (2012) ANNEX D (THE RECOMMENDATIONS STATE THAT THE RPA SHOULD BE CAPPED AT 707 M²) NOTE - ALL CALCULATIONS ROUNDED TO NEAREST DECIMAL

TREE SURVEY SCHEDULE (BS5837: 2012)

SITE:	JB FABRICATIONS, BRYN ROAD, WREXHAM INDUSTRIAL ESTATE
CLIENT:	JB FABRICATIONS (WREXHAM) LTD
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A HENDERSON
ASSESSMENT DATE:	13/01/2023
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	23/AIA/WXM/310

PAGE 2 OF 2

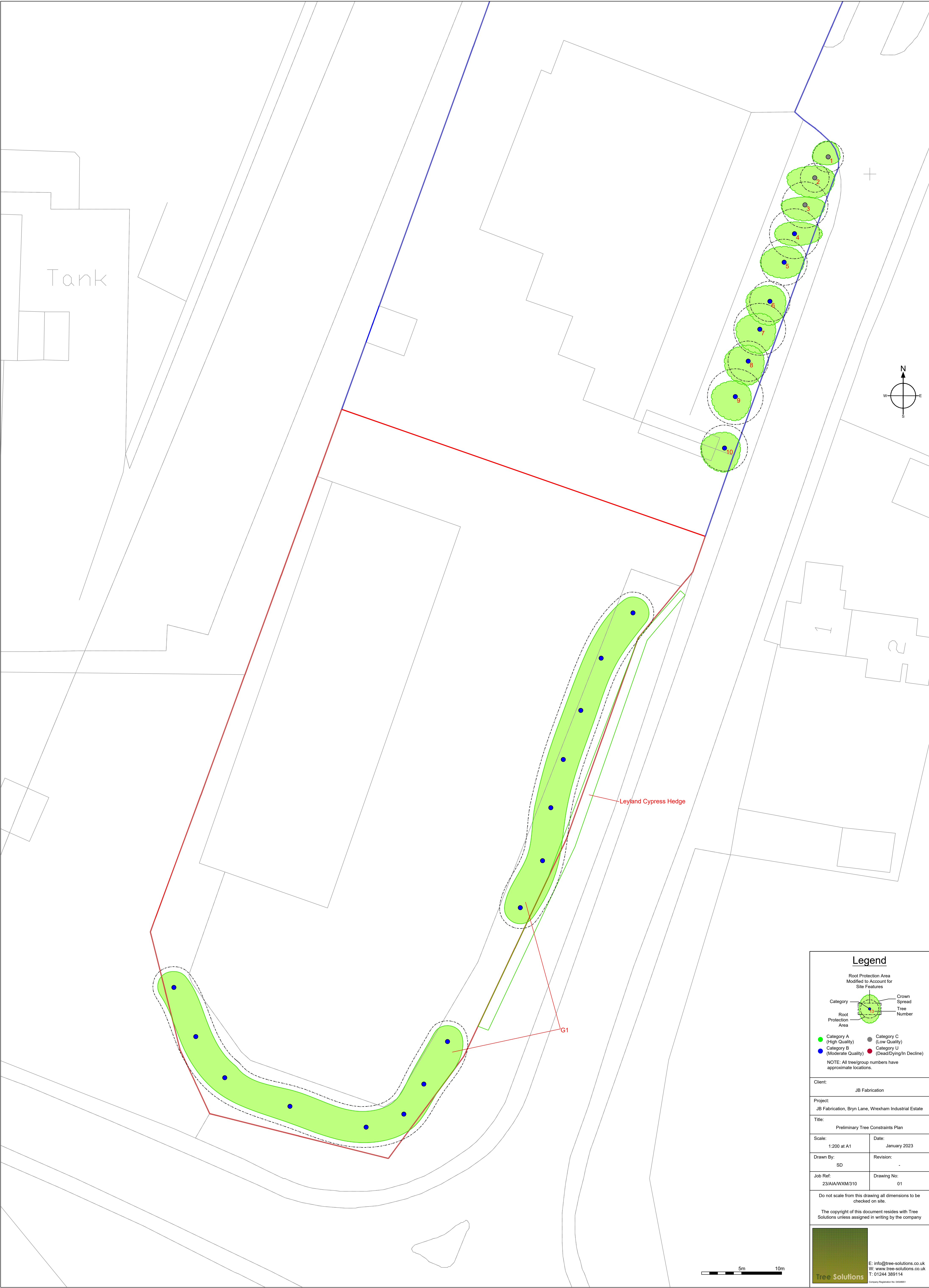
TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA.(mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
T7	Maple	SM	7	2	2	2.5	3	270	G	• As T4	• No works	B2	3.2 33m²
T8	Maple	SM	7	2	2	2.5	3	210	G	• As T4	• No works	B2	2.5 20m²
T9	Maple	SM	7	2	2	2.5	3	290	G	• As T4	• No works	B2	3.5 38m²
T10	Maple	SM	7	2	2	2.5	3	240	G	• As T4	• No works	B2	2.9 26m²
G1	Maple	SM	≤6.5	2	2	2	2	≤220	G	• Linear group within confined location with shipping containers resting against stems to west & heavily compacted yard area over rooting zone • E.R.C. 10+	• No works required	B2	2.6 22m²

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	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)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix Two

Preliminary Tree Constraints Plan



Legend

Root Protection Area
Modified to Account for
Site Features

Category A
(High Quality)

Category B
(Moderate Quality)

Category C
(Low Quality)

Category U
(Dead/Dying/In Decline)

Root Protection Area

Crown Spread

Tree Number

NOTE: All tree/group numbers have approximate locations.

Client: JB Fabrication	
Project: JB Fabrication, Bryn Lane, Wrexham Industrial Estate	
Title: Preliminary Tree Constraints Plan	
Scale: 1:200 at A1	Date: January 2023
Drawn By: SD	Revision: -
Job Ref: 23/AIA/WXM/310	Drawing No: 01

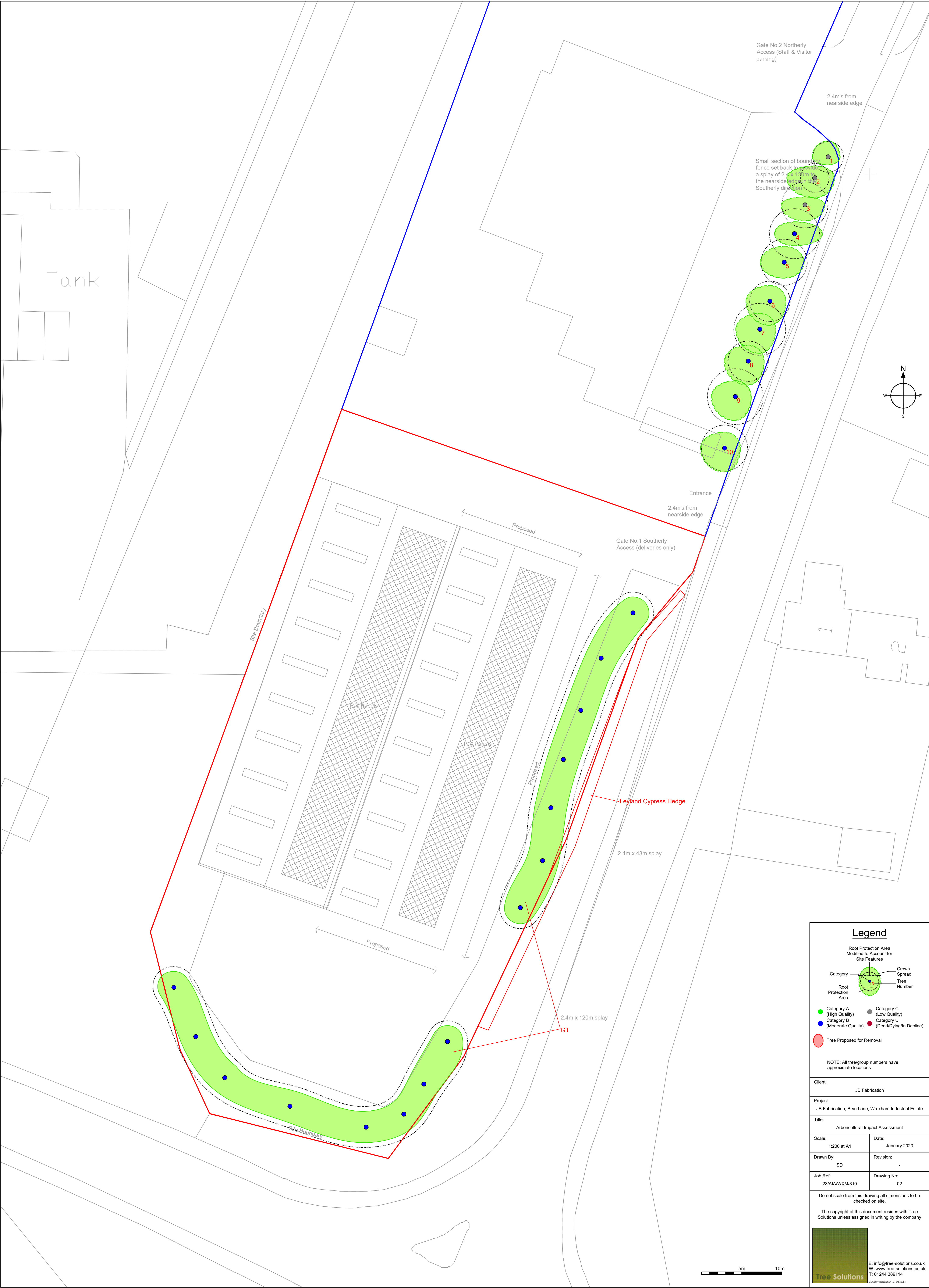
Do not scale from this drawing all dimensions to be checked on site.

The copyright of this document resides with Tree Solutions unless assigned in writing by the company

E: info@tree-solutions.co.uk
W: www.tree-solutions.co.uk
T: 01244 359114
Company Registration No: 14058511

Appendix Three

Impact Assessment Plan



Legend

Root Protection Area
Modified to Account for
Site Features

Category

Root Protection Area

Category A
(High Quality)

Category B
(Moderate Quality)

Category C
(Low Quality)

Category U
(Dead/Dying/In Decline)

Tree Proposed for Removal

NOTE: All tree/group numbers have approximate locations.

Client:

JB Fabrication

Project:

JB Fabrication, Bryn Lane, Wrexham Industrial Estate

Title:

Arboricultural Impact Assessment

Scale:

1:200 at A1

Date:

January 2023

Drawn By:

SD

Revision:

-

Job Ref:

23/AIA/WXM/310

Drawing No:

02

Do not scale from this drawing all dimensions to be checked on site.

The copyright of this document resides with Tree Solutions unless assigned in writing by the company

E: info@tree-solutions.co.uk
W: www.tree-solutions.co.uk
T: 01244 359114
Company Registration No: 14058511