

Tre Survey & Indicative Arboricultural Impact Assessment

Halsnead Garden Village North, Whiston, Knowsley

Prepared for:

CLEAN SWEEP HOLDINGS LTD
C/o Barton Willmore

Our Ref: 20/AIA/KNOWSLEY/21

June 2020

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1.0 INSTRUCTION

- 1.1 We have been instructed by Clean Sweep Holdings Ltd 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 Halsnead Garden Village North, Whiston, Knowsley. As such, all significant 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 phase 1 tree survey was carried out in 03 October 2017 and updated in May 2020 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 The application site contains two parcels of land referred to as A- Lickers Lane & B – Windy Arbor Road.

Within site A two individual trees (T1–T2), six groups (G1-G6) and two woodlands (W1-W2) were surveyed and within site B, 5 individual trees (T1-T5), four groups (G10G4) and one woodland (W1) were surveyed. All trees are plotted on a Preliminary Tree Constraints Plan and an indicative Impact Assessment Plans Ref: 20/AIA/Knowsley/21, Drawing No. 1&2 at **Appendix 2/3**. All arboricultural information recorded during the survey is presented within a two survey schedule tables at **Appendix 1**.

- 1.5 The Arboricultural Impact Assessment is based on the Barton Wilmore Illustrative Master Plan Ref: 31768, Drawing No. 4 (Rev E).

2.0 STATUTORY CONTROLS

- 2.1 A search on Knowsley Council's interactive map on 29/06/2020 revealed that no trees on the land off Lickers Lane are subject to a Tree Preservation Order and there are no Conservation Area designations. However, the former nursery site off Windy Arbor Road site contains a woodland with a Tree Preservation Order Ref: 64/00001/TPO - Order No:1 - 1964

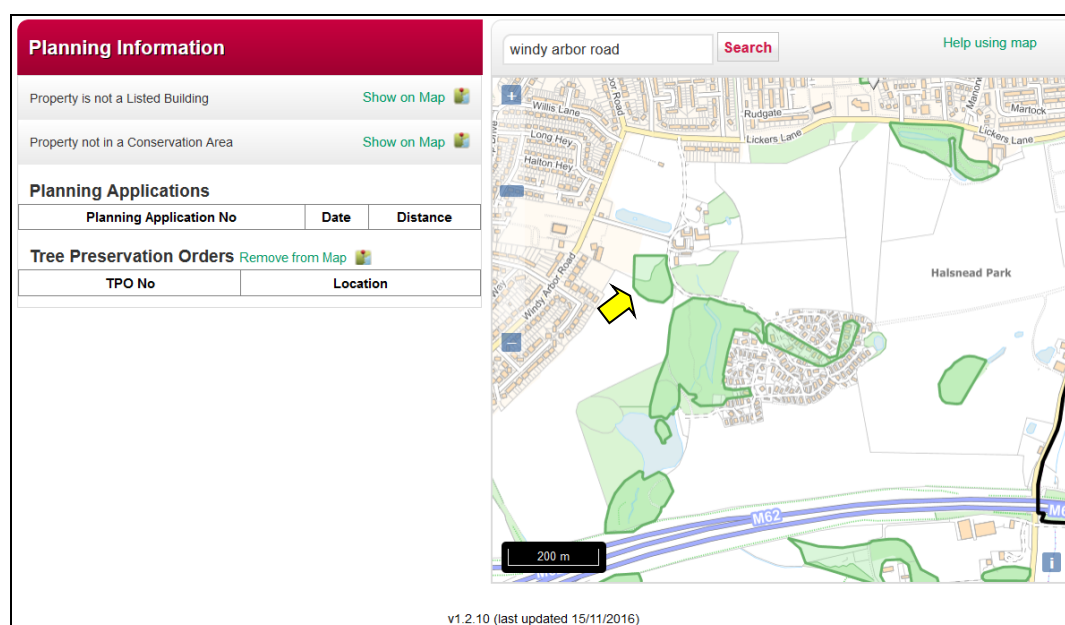


Plate 1 - Screenshot extract from Knowsley Council interactive map revealing location of protected trees off Windy Arbor Road. Note, no protected tree on land off Lickers Lane

- 2.2 According to Natural England online data no woodland within the site boundary is classified as Ancient & Semi-Natural Woodland in the inventory.

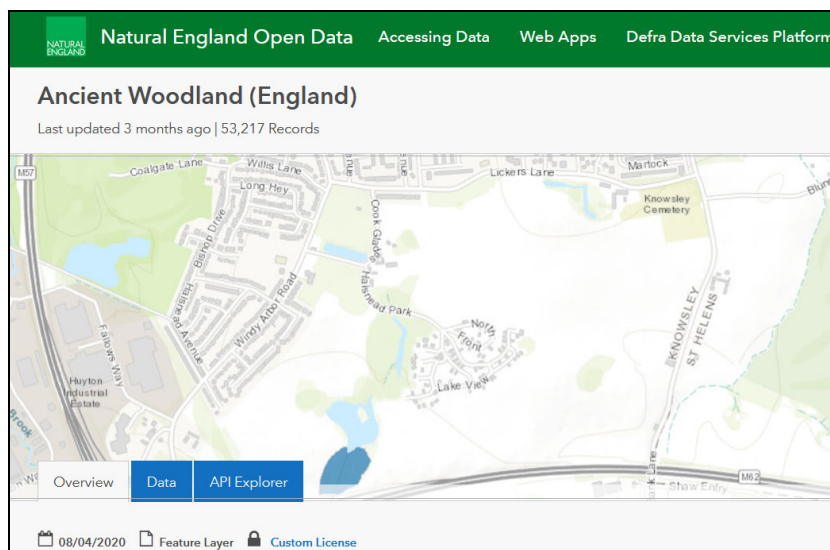


Plate 2 - Screenshot extract from Natural England national Ancient Woodland Inventory

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). Bats are also protected under The Conservation of Habitats and Species Regulations 2010 (as amended). Refer to CES Ecology report for further details.

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 The Site extends to c.11.6 hectares and comprises of two parcels of land.

Parcel A is accessible via Lickers Lane and comprises a mixture of arable fields, grassland and woodland. The established woodland area is to the north and is known as Lickers Wood, a remnant from the past estate. The woodland section to the NE is predominantly naturally colonised.

Parcel B comprises land formerly used as a garden centre and is accessible via Windy Arbor Road. It is unkempt and significantly overgrown with naturally colonised scrub. There is an area of unmanaged woodland to the SE that is subject to a TPO.



4.0 DEVELOPMENT PROPOSAL

- 4.1 Demolition of buildings and the development of approximately 277 dwellings (Use Class C3) and a care home of approximately 100 beds (Use Class C2) together with associated open space, highways infrastructure and access from Lickers Lane and Windy Arbor Road (access applied for with all other matters reserved)

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. With the AIA 1, the RPA is only shown indicatively on the preliminary TCP, as its shape may be subject to amendment as the design progresses.
- 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 This is the area above ground occupied by the crown (branches) of the tree, along with allowances for working space (safe working area) and if appropriate, for future growth. The extent of CEZ 2 is determined by considering the existing and future crown spread of the tree(s), bearing in mind the possibility of this being modified by an acceptable quantum of pruning.

5.4 CEZ 3: TREE DOMINANCE ZONE

- 5.4.1 This is the area above ground dominated by the tree in relation to issues of shading, seasonal debris and safety apprehension. This area is calculated by considering the height and spread of the tree relative to the proposed buildings, cross referenced with intended end use. As such, what is assessed is the likely psychological effect of the tree on the end user.
- 5.4.2 The purpose of identifying CEZ 3 is to protect trees from post development pressure (resentment) by the site's end users, who may, if resentful of the trees, seek to procure excessive pruning treatments or even to have them removed. This is a common Planning

Service concern, which has led on many occasions both to refusals of consent and to dismissed Appeals against those refusals.

5.5 CEZ 4: NEW PLANTING ZONE

- 5.5.1 In some cases, it may be appropriate to identify and protect areas intended for new landscape planting, which can fail to establish if the soil has been heavily compacted or contaminated during the demolition/construction process. The means of protecting CEZ 4 will either be by fencing it off prior to the start of works on site, or by soil remediation once construction has finished (and prior to the start of planting). Topsoil protection in areas destined for new planting is frequently an economy measure, saving on plant replacement and soil structure remediation.

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.

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 close 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 present to prevent good radial root spread on either site.

7.2 Underground Services

- 7.2.1 We have considered the broad implications of the provision of underground services but the locations of existing and proposed were not identified on the plans supplied by the Project Architect and in this regard, our advice is of a general nature.
- 7.2.2 Drainage and service runs may need to be constructed within the rooting areas of retained trees. If this is a requirement of the development it will be necessary to retain significant roots and methods of excavation, such as thrust boring or hand digging, may need to be adopted to ensure that these impacts are acceptable.

- 7.2.3 As with foundation design, low impact construction methods for services installation are now well established. For more information regarding underground services, reference should be made to the National Joint Utilities Group (NJUG) Publication No. 10. Volume 4 *'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'* 2007.

8.0 DEVELOPMENT IMPACT TO TREES

- 8.1 Tree Solutions carried out a phase one preliminary tree survey in May 2020 and provided the project architect with a report in which all existing trees/hedgerows and their respective Root Protection Areas (RPA) were identified and plotted on a tree constraints and impact assessment plan. The architect has incorporated the design and layout advice contained within the stage 1 survey and input from Tree Solutions to ensure the best quality trees can be retained with no adverse construction impacts. We are therefore satisfied that the masterplan layout has taken the long-term future of the most important trees into account is in accordance with Knowsley Council Planning Policies, National Planning Policy Framework (NPPF-2019) and recommendations contained with BS5837: 2012.
- 8.2 The design has been well integrated within the constraints posed by the most important category 'A' trees on both parcels of land. Lickers Lane Wood (W1) has been retained along the northern boundary and provides an attractive natural landscape buffer to the road and residential estate beyond. The protected woodland in the SE corner of parcel B is also retained ensuring the amenity and landscape value it affords the area is maintained and enhanced well into the future. Both woodland areas are set well back from any residential boundary ensuring no issues with over dominance, excessive shading or perceived H&S concerns that would place future pressures to fell or prune. Furthermore, the development ensures that these important woodland areas can be brought back into good management whereby safeguarding them for future generations.
- 8.3 In order to accommodate the development it will be necessary to remove the following trees:

Parcel A

- Tree number 1, this is a 'C' category Oak due to its majorly asymmetric crown form as a result of the northern canopy being removed to clear overhead power lines. This tree is not prominent in the landscape and its loss will largely be unnoticed
- Groups 1-5. Group 2 is a small area of recently planted Oaks that have seen no management. Whilst well established, they can be easily replaced by new tree planting associated with future landscape proposals. Groups 3-5 are predominantly naturally colonised Goat Willow and Birch many of which are now lapsed coppice that are failing at the stool due to excessive loading. All trees within these groups have been categorised as 'C' grade i.e. unremarkable tree of limited merit and/or those present in groups but offering only temporary/transient landscape benefits. These trees should not form a material consideration of planning.
- Woodland 1, an area of lapsed Sycamore Coppice that has now formed a closed canopy copse granting them more collective landscape value and consequently a category 'B' grading. These trees are however screened by the more visually prominent trees along the site frontage (W1) that are all being retained, as such their loss will be mitigated.

Parcel B

- Tree numbers 1-4 & G1 along the site frontage with Windy Arbor Road are all small diameter ornamentals planted in a narrow linear gap between the former garden centre car park and the road. They are not particularly good examples and have no long-term viability due to the inhospitable rooting environment. For this reason, they have been given a 'C' grade i.e. those with no material conservation or cultural value as they can be easily replaced with more appropriate planting.
- Tree number 1, an Oak within a raised brick planter outside the former garden centre building. This tree is screened from any public view by the dense boundary scrub making its loss largely unnoticed.

- 8.4 The retention value of all tree to be removed is disproportionate to the value of providing housing as part of the Halsnead Park Garden Village scheme and their loss will have no significant adverse impact on the landscape character and setting of the locale. Furthermore, their loss can be adequately mitigated by the extensive landscape proposals associated with the project that will radically enhance the visual amenity of the area. We can therefore see no valid arboricultural grounds for refusal.



P1- Lickers Lane Wood (W1) viewed from within the site to SW. Woodland provides important mature landscape and landscape buffer for new development



P2- Area of naturally colonised & lapsed Sycamore coppice (W2) to be removed for development



P3- G2, young Oaks



P4- G4, self-set Willow & Birch of no value



P5- Parcel B – former nursery now naturally colonised scrub



P6- Parcel B – G4, mass of self set trees within TPO woodland area

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 stage 1 preliminary tree survey in order to inform the masterplan layout
 - Respecting the constraints posed to development of the site by high or moderate quality trees
 - 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 of any amenity or landscape value are affected by the proposal ensuring no adverse impact on the existing landscape character and setting of the locale

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)

SITE:	HALSNEAD GARDEN VILLAGE NORTH, WHISTON – PARCEL A
CLIENT:	CLEAN SWEEP HOLDINGS LIMITED
BRIEF:	STAGE 1 TREE SURVEY & INDICATIVE ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	MAY 2020
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	20/AIA/KNOWSLEY/21B

TREE NO. T - Tree G - Group H - Hedge W - Wood	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	Oak	M	15	9	5	5	3	500	M/G	- Entire crown to north removed to clear adjacent overhead power lines - Not visually significant - Large dead wood in canopy - Biodiversity value - E.R.C. 10+	Remove for development	C3	6 113m²
T2	Sycamore	M	16 0.5E	6	5	6	6	600	G	- Located of site with no access to survey - Prominent in landscape - E.R.C. 20+	3rd party tree - N/A	B2	7.2 163m²
G1	Sycamore	EM	≤13	4	4	4	4	≤200	G	- Mass of stems from past coppice - Unremarkable trees of limited merit - E.R.C. 10	Remove for development	C3	2.4 18m²
G2	Oak	SM	≤4.5	2	2	2	2	≤200	G	- Small trees planted at 2m centres and unmanaged - Not visually prominent due to small size - Have potential if thinned out to retain best quality stems to establish to maturity - E.R.C. 10	Remove for development	C2	2.4 18m²

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:	HALSNEAD GARDEN VILLAGE NORTH, WHISTON – PARCEL A
CLIENT:	CLEAN SWEEP HOLDINGS LIMITED
BRIEF:	STAGE 1 TREE SURVEY & INDICATIVE ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	MAY 2020
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	20/AIA/KNOWSLEY/21B

TREE NO. T - Tree G - Group H - Hedge W - Wood	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						
G3	Birch	M	≤15	2	2	2	2	≤300	G	- Mature trees within area of unmanaged scrub - Unremarkable trees of limited future merit - E.R.C. 10	Remove for development	C2	3.6 41m²
G4	Goat Willow 90% Birch Aspen Cherry Oak	SM / EM	≤7					≤200	M/G	- Mass of overgrown & unmanaged scrub of no significant value - Lapsed coppice with failed stems - E.R.C. 10	Remove for development	C2	2.4 18m²
G5	Sycamore Elm (Dead)	EM	≤12	1.5	1.5	1.5	1.5	≤150	G	- Linear group of small diameter past coppice stems - E.R.C. 10	Remove for development	C3	1.8 10m²
G6	Sycamore	M	≤15	5	5	5	5	≤400	G	- Trees located outside site boundary with no access to survey - Appear to be multi-stem from past coppice - E.R.C. 10	3rd party trees	C2	4.8 72m²

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	HALSNEAD GARDEN VILLAGE NORTH, WHISTON – PARCEL A
CLIENT:	CLEAN SWEEP HOLDINGS LIMITED
BRIEF:	STAGE 1 TREE SURVEY & INDICATIVE ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	MAY 2020
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	20/AIA/KNOWSLEY/21B

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TREE NO. T - Tree G - Group H - Hedge W - Wood	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						
W1	Sycamore 90% Ash Oak	EM / M	≤17					≤400	M/G	- Established woodland providing an attractive green corridor along Lickers Lane - Predominantly Sycamore - Trees along northern boundary are multi-stemmed from past coppice - Requires long-term management plan - Registered Local Wildlife Site - E.R.C. 40 if managed	- Remove all dead, dying, and dangerous trees - Requires woodland management plan	A2	4.8 72m²
W2	Sycamore 90% Birch Oak Lime x3	Y- M	≤15					≤250	M/G	- Unmanaged wooded copse - Small diameter naturally colonised trees screened by mature trees along frontage with Lickers Lane - E.R.C. 20	Remove for development	B2	3 28m²

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

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	HALSNEAD GARDEN VILLAGE NORTH, WHISTON – PARCEL B
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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	Cedar (Deodar)	EM	13 0.5E	3	3	4	2	300	G	- Planted as part of the former site usage as plant nursery - Within confined rooting environment with hard standing over primary roots and concrete edge restraint to east - E.R.C. 10	Remove & replace as part of landscape scheme	C3	3.6 41m²
T2	Cedar (Atlas)	EM	13 1.5E	1.5	1.5	1.5	1.5	310	G	- As T1 planted within confined & inhospitable rooting environment & insufficient space to develop to maturity - E.R.C. 10	As T1	C3	3.7 43m²
T3	Cedar (Atlas0	SM	7 0	1	1	1	1	260	M	- As T2 - stunted form due to inhospitable rooting environment - E.R.C. 0	As T1	C3	3.1 31m²
T4	Cedar (Deodar)	EM	13 0E	3	3	4	2	300	G	As T1	As T1	C3	3.6 41m²

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)

Tree Solutions

Arboricultural Consultants

SITE:	HALSNEAD GARDEN VILLAGE NORTH, WHISTON – PARCEL B
CLIENT:	CLEAN SWEEP HOLDINGS LIMITED
BRIEF:	STAGE 1 TREE SURVEY & INDICATIVE ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	MAY 2020
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	20/AIA/KNOWSLEY/21

PAGE 2 OF 3

TREE NO. T - Tree G - Group H - Hedge W - Wood	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						
T5	Oak	M	15 1E	7	9	7	9.5	790	G	- Located within small circular planting bed surrounded by tarmac hard standing that was formerly the car park to the garden centre - Not visually prominent due to screening - Minor dead wood in crown & excessive end loading - E.R.C. 20	Remove for development	B2	9.5 282m²
G1	Pine x2 Blue Spruce x 1	SM	≤6					≤250	M/G	- Small ornamental trees planted in confined liner bed with insufficient space to develop to maturity - E.R.C. 10	Remove & replace as part of landscape plan	C2	3 28m²
G2	Ash	M	≤18	4	7	4.5	4.5	≤600	M/P	- Group of 4 trees forming 1 closed canopy group - Centre tree is in advanced decline - Outside trees have cankers, multiple broken limbs, and decay cavities - Ash Dieback evident in crowns - Trees have a short safe & useful life expectancy & are not suitable to retain within proximity to any targets i.e. residential housing - E.R.C. <20	No works required to accommodate development proposal but would recommend removing for H&S	B2	7.2 163m²
G3	Sycamore	M	≤19	4	4	4	4	≤550	G	- Ivy clad trees impeding inspection - Collectively form a small copse with closed canopies - E.R.C. 20+	Sever Ivy as base & crown clean if retained	B2	6.6 137m²

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	HALSNEAD GARDEN VILLAGE NORTH, WHISTON – PARCEL B
CLIENT:	CLEAN SWEEP HOLDINGS LIMITED
BRIEF:	STAGE 1 TREE SURVEY & INDICATIVE ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	MAY 2020
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	20/AIA/KNOWSLEY/21

PAGE 3 OF 3

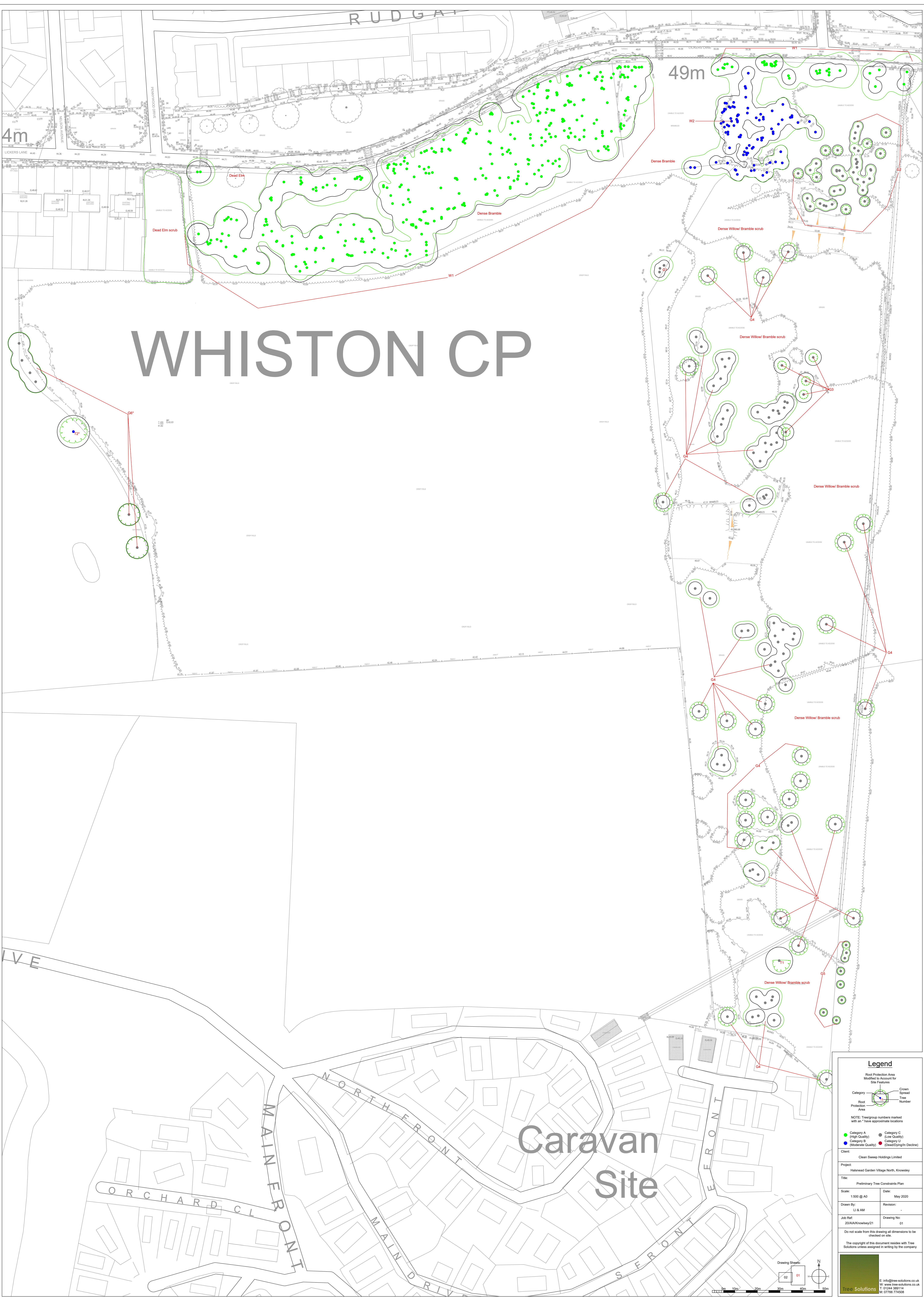
TREE NO. T - Tree G - Group H - Hedge W - Wood	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA.(mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
G4	Goat Willow	Y/ SM / EM	≤7					≤100	M/G	- Low quality scrub - E.R.C. 0	Remove	C2	1.2 5m²
W1	Sycamore 90% Oak	EM /M	≤18					≤450	M/G	- Established woodland - Subject to TPO - E.R.C. 40	Requires management plan	A2	5.4 92m²

Table 1 Cascade chart for tree quality assessment

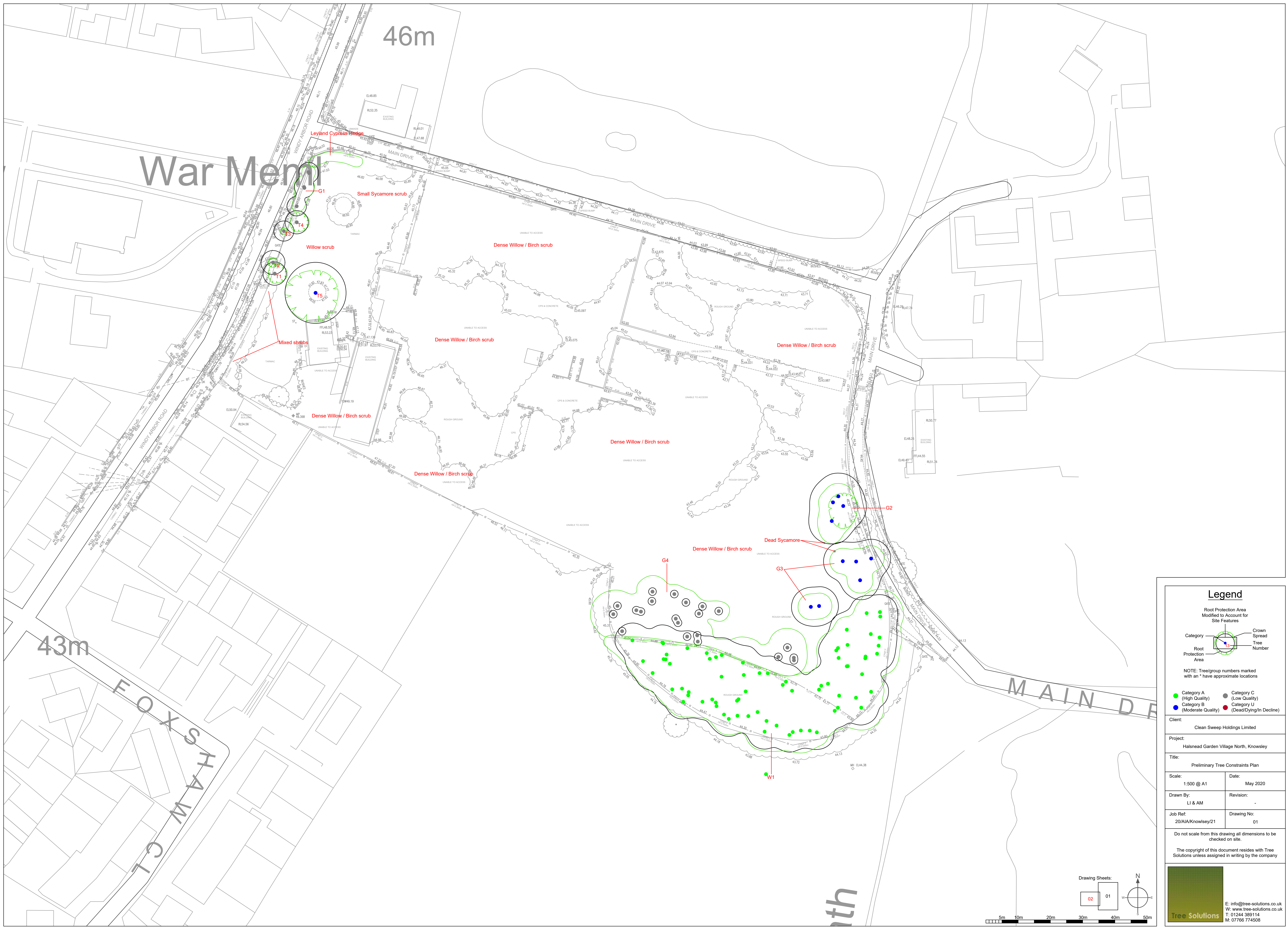
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 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 Constraints Plan



War Memorial



Legend

Root Protection Area
Modified to Account for
Site Features

Category

Root Protection Area

Crown Spread

Tree Number

NOTE: Tree/group numbers marked with an * have approximate locations

Category A (High Quality)	Category C (Low Quality)
Category B (Moderate Quality)	Category U (Dead/Dying/In Decline)

Client:	Clean Sweep Holdings Limited
Project:	Halsnead Garden Village North, Knowsley
Title:	Preliminary Tree Constraints Plan
Scale:	1:500 @ A1
Date:	May 2020
Drawn By:	LI & AM
Revision:	-
Job Ref:	20/AIA/Knowsley/21
Drawing No:	01

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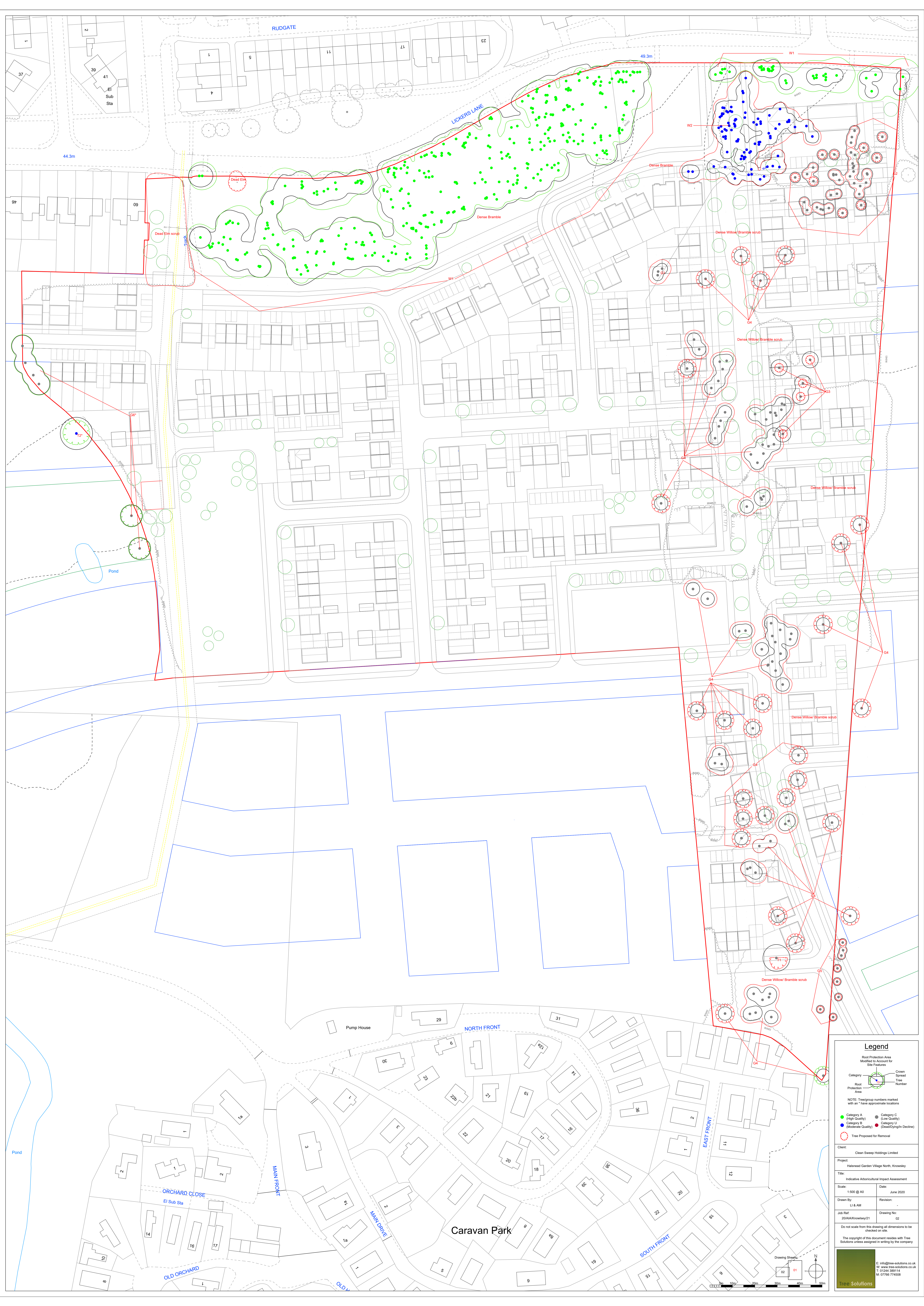
Drawing Sheets:

02	01
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Appendix Three

Indicative Impact Assessment Plan



Legend
Root Protection Area
Modified to Account for
Site Features

Category A
(High Quality)

Category B
(Moderate Quality)

Category C
(Low Quality)

Category D
(Dead/Dying/In Decline)

Tree Proposed for Removal

Crown
Spread
Tree
Number

NOTE: Treegroup numbers marked
with an "x" have approximate locations

Client:
Clean Sweep Holdings Limited

Project:
Haleswood Garden Village North, Knowsley

Title:
Indicative Arboricultural Impact Assessment

Scale:
1:500 @ A0

Date:
June 2020

Drawn By:
LI & AM

Revision:
-

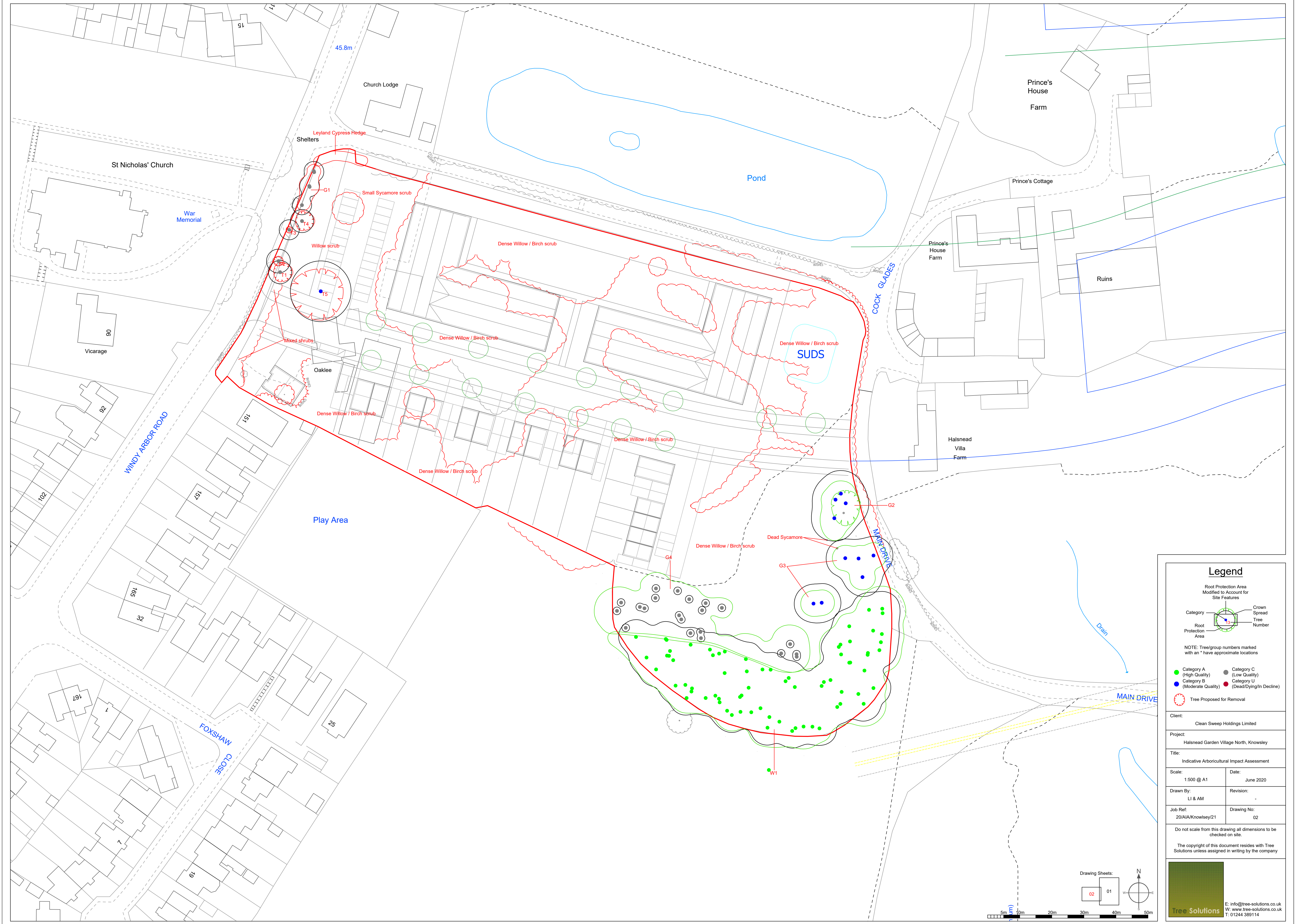
Job Ref:
200AA/Knowsley21

Drawing No:
02

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Legend

Root Protection Area
Modified to Account for
Site Features

Category

Root Protection Area

Crown Spread

Tree Number

NOTE: Tree/group numbers marked with an * have approximate locations

Category A (High Quality)

Category B (Moderate Quality)

Category C (Low Quality)

Category U (Dead/Dying/In Decline)

Tree Proposed for Removal

Client:	Clean Sweep Holdings Limited
Project:	Halsnead Garden Village North, Knowsley
Title:	Indicative Arboricultural Impact Assessment
Scale:	1:500 @ A1
Date:	June 2020
Drawn By:	LI & AM
Revision:	-
Job Ref:	20/AIA/Knowsley/21
Drawing No:	02

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Drawing Sheets:

02	01
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5m 10m 20m 30m 40m 50m