

Arboricultural Impact Assessment

Kirkby Valley Golf Club

Prepared for:

MAGHULL DEVELOPMENTS LTD
C/o Roman Summer Associates

Our Ref: 19/AIA/Knowsley/16 (Rev C)

July 2021

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1.0 INSTRUCTION

- 1.1 We have been instructed by Mughull Developments Ltd C/o Roman Summer Associates 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 work at Kirkby Valley Golf Course, Ingoe Lane, Kirkby, L32 4SS. As such, all trees on site have been surveyed and are listed within a Tree Survey Schedule (**Appendix 1**) and plotted on all accompanying plans.
- 1.3 The tree survey was carried out on 17 July 2019 and updated in May 2021. Our appraisal of the mechanical integrity of trees on the site is enough only 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 Twenty-four individual trees (T1-T24), fifty-six groups (G1-G56) and ten hedgerows (H1-H10) were surveyed and mapped on Preliminary Constraints Plan and Impact Assessment Plans Ref: 19/AIA/Knowsley/16, Drawing Nos. 1&2 at **Appendix 1/2**. All arboricultural information recorded during the survey is presented within a schedule at **Appendix 1**.
- 1.5 The Arboricultural Impact Assessment is based on the proposed layout Ref: 9627 L27 (Rev B) provided by the project architects RGP.

2.0 STATUTORY CONTROLS & PLANNING POLICY

- 2.1 A search on Knowsley Council interactive map revealed that the eastern section of group 1 and all of groups 18/19 fall within a designated Conservation Area. Further email correspondence with Knowsley Council Tree Officer confirmed that the same groups including group 24 are subject to a Tree Preservation Order Ref: 71/00003/TPO. As such, statutory planning consent is required prior to undertaking any works to these trees not granted consent under this planning application. There is no statutory protection to any other trees on site.

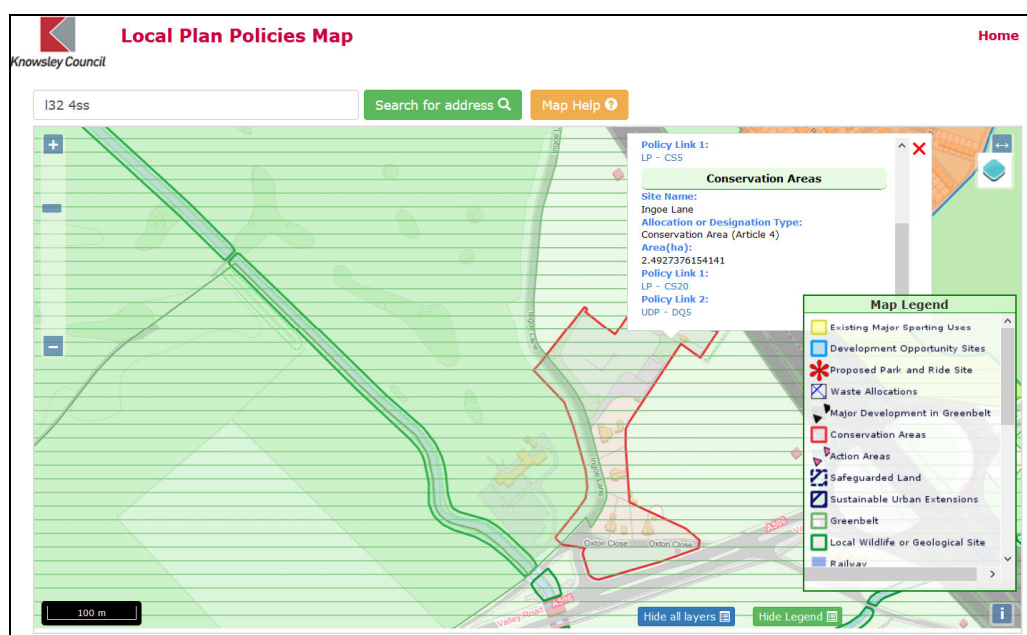


Plate 1 – Extract from Knowsley Council Interactive map showing location of Conservation Area

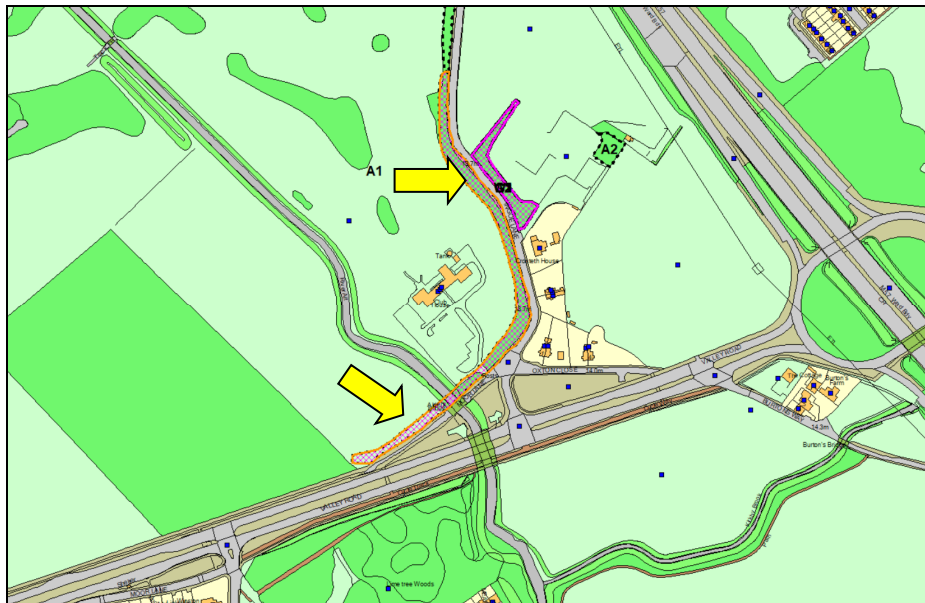


Plate 2 – Extract from Knowsley Council TPO map indicating location of protected trees (G2)

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).

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 is Kirkby Valley Golf Course and a vacant disused open space which abuts the main golf course, the A506 and Aintree Lane.

4.0 DEVELOPMENT PROPOSAL

- Reconfiguration and other improvement works across the entire golf course, including the reshaping of tees / greens / bunkers to provide both an improved 18 hole course and a new 9 hole course.
- New and improved irrigation / drainage works (including irrigation lake), extensive tree and shrub planting, and ecological mitigation measures across the course.
- The erection of a footbridge over the River Alt (to provide improved access around the course).
- The erection of a new 2 storey Clubhouse of 2,027.8 sqm GEA with associated operational / management offices, golf shop, café / restaurant, function room, changing and toilet facilities.
- Retention, alteration and 364 sqm (GEA) extension of the existing clubhouse, and its change of use to form a golf-related / grounds maintenance training academy with associated classroom space, cafeteria and overnight accommodation for golf professionals / teachers / trainers (existing access and car park retained / unchanged).
- A new centrally located greenkeeper's compound with associated 720 sqm GEA portal frame building to contain welfare facilities, office, training space and equipment storage and maintenance and security fencing.
- An adventure golf course and practice putting green.
- A golf driving range with an associated 2 storey building containing 40 driving bays (over two levels), bar / lounge, pro golf shop, training and practice rooms / facilities, and external lighting and safety netting.

- 6 synthetic outdoor 5-a-side football pitches with associated lighting, means of enclosure and car parking.
- 5 synthetic outdoor tennis courts with associated means of enclosure and lighting.
- 1 external bowling green with associated timber players' hut, means of enclosure and lighting.
- Car and cycle parking spaces to serve all of the above facilities.
- Two new accesses created onto Valley Road.
- The formation of a new gated access via Aintree Lane for the use of construction traffic (during construction phase) and - upon completion of development works - for the sole use of course operatives for the purposes of course management / maintenance.

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 $\sqrt{(\text{mean stem diameter}^2) \times \text{number of stems}}$ 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.
- 5.4.3 The means of protecting CEZ 3 is likely to include optimising the site layout and room type (especially in relation to new residential dwellings), such that any adverse psychological impacts of the trees are reduced to an acceptable minimum. Key principles include ensuring adequate separation distances between trees and new buildings, in the context of the buildings' end use relative to the location of the tree(s) and avoiding excessive obstruction by trees of critical solar access.

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.

6.2 SOIL ASSESSMENT

- 6.2.1 A soil assessment should be undertaken by a competent person to inform decisions relating to:
- the root protection area (RPA)
 - tree protection
 - new planting design; and
 - foundation design to take account of retained, removed and new trees (potential soil subsidence/heave)

Tree Solutions do not undertake soil assessments and the client is advised to seek specialist advice in this respect.

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 tree numbers 2, 10 & 11 have been modified are shown running around the edge of the existing clubhouse building and then extending further in the opposite direction where a more favourable rooting environment exists. All other RPA's have been plotted unmodified as there were no underground barriers to prevent good radial root spread.

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 stage one preliminary tree survey in July 2019 and again in May 2021 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 phase 1 survey and input from Tree Solutions to ensure the best quality trees can be retained with no adverse construction impacts. We are satisfied that the proposal has taken the long-term future of the most important trees and into account and the layout is therefore in accordance with The National Planning Policy Framework (2019), Knowsley Council Planning Policies and recommendations contained with BS5837: 2012.
- 8.2 In order to accommodate the proposed works several trees will require to be removed as listed in the table below:

TREE RETENTION CATEGORY	NUMBER OF TREES TO BE REMOVED FOR DEVELOPMENT
A	0
B	40
C	227
U	12

It is clear from the above table that most trees to be removed are 'C' category i.e. those of no material conservation or cultural value and or those offering low or only transient landscape benefit to the site and wider area. Most of these trees are located within the area of unkempt land to the south-east of the golf course and are predominantly naturally colonised scrub. The removal of these low-quality trees should not form a material consideration of this planning application particularly as all will be replaced with better quality specimen trees on a 2:1 basis. These replacement trees will radically enhance the landscape setting well into the future making this a significant improvement in

terms of tree cover augmentation and amenity enhancement. Furthermore, the Landscape & Visual Impact Assessment (LVIA) undertaken by IDG clearly indicates that the development area is almost entirely screened by established trees and hedgerows around the boundaries making the removal of trees internal to the site almost unnoticeable.

- 8.3 There are no anticipated adverse impacts to retained trees and hedgerows as they have been well integrated within the design in order to safeguard the amenity and screening value, they afford the site and locale. As such there are no special engineering solutions required and no future pressures to fell or remove trees in the future. We are therefore satisfied that this proposal is in full accordance with the BS and we can see no valid arboricultural grounds for refusal.

9.0 CONCLUSIONS

- 9.1 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 layout and design of the proposed development
 - 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
 - Extensive new tree planting at a 2:1 ratio will radically increase the tree cover to the area as well as provide a significant visual enhancement

Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE (BS5837: 2012)

SITE:	KIRKBY VALLEY GOLF COURSE
CLIENT:	MAGHULL DEVELOPMENTS LTD
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	C WATKINS
ASSESSMENT DATE:	17/07/2019 – MAY 2021
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	19/AIA/KNOWSLEY/16

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	Norway Maple	EM	12 0.5S	3	5	5	4	600	Good	- Edge of bunker - E.R.C 10	Remove for development	C1	7.2m 163m²
T2	Weeping Willow	M	17 3S	10	12	12	11	780	Good	- Leaning stem – nonprogressive - Root heave - Dead wood throughout crown - E.R.C 20	Remove for development	B1	9.4m 275m²
T3	Sycamore	EM	10 2S	4	4	4	4	475 500 (690)	Good	- Co-dominant at base with compression liable to failure - E.R.C 10	Remove & replace with better quality specimen tree	C1	8.3m 215m²
T4	Ash	EM	10 3S	3	3	3	3	400	Fair	- Dieback - Decline possible - E.R.C 10	Remove for development	C1	4.8m 72m²
T5	Norway Maple	EM	8 3	5	5	5	5	275	Good	- On fairway - E.R.C 10	Remove for development	C2	3.3m 34m²
T6	Alder	EM	10 2NE	5	5	5	5	400	Good	- On fairway - E.R.C 10	Remove for development	C1	4.8m 72m²

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

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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						
T7	Norway Maple	EM	8 2S	5	6	5	5	400	Good	- On fairway - E.R.C 10	Remove for development	C1	4.8m 72m²
T8	Norway Maple	EM	8 2S	5	5	5	5	400	Good	- On fairway - E.R.C 10	Remove for development	C1	4.8m 72m²
T9	Norway Maple	EM	8 2.5	4	4	4	4	325	Good	- On fairway - E.R.C 10	Remove for development	C1	3.9m 48m²
T10	Weeping Willow	M	18 3W	8	12	10	11	950	Good	- Large spreading crown - Dead wood throughout - Suspect stem cavity - E.R.C 20	Remove for development	B1	11.4m 408m²
T11	Hybrid Black Poplar	M	22 2S	10	11	10	11	1250	Good	- Tree liable to branch failures - Large subsiding limbs - Unsuitable for long term retention - E.R.C 20	Remove for development	B1	15m 707m²
T12	Cockspur Thorn	M	5 1.5E	4	4	4	4	225	Good	- Under canopy of T11 - E.R.C 10	Remove for development	C1	2.7m 23m²
T13	Cockspur Thorn	M	5 1.5E	4	4	4	4	225	Good	- Under canopy of T11 - E.R.C 10	Remove for development	C1	2.7m 23m²
T14	Scots Pine	EM	8 3E	4	4	4	4	225	Good	- Leans to SE - E.R.C 10	Remove for development	C1	2.7m 23m²
T15	Sycamore	EM	10 2S	4	5	4	5	500	Good	- Shrubbery - E.R.C 20	No works	B2	6m 113m²

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				N	S	E	W						
T16	Crack Willow	M	17 0	15	12	12	12	400x 10 1250+	Good	- Access restricted - Tree viewed from compound - Lapsed coppice - Area estimated - E.R.C 20	Remove	B2	15m 724m²
T17	Lime	EM	10 2	4	4	4	4	250	Good	- Car park area - E.R.C 10	No works	C2	3m 28m²
T18	Ash	EM	15 2S	5	4	5	4	450	Good	- Car park area - E.R.C 10	Remove for development	C2	5.4m 92m²
T19	Cherry	EM	5 0	5	5	5	5	150x3 (260)	Fair	- Die back - Poor form - E.R.C 10	Remove for development	C1	3.1m 31m²
T20	Hawthorn	EM	9 2N	3	4	3	4	275	Good	- In car park verge - E.R.C 10	No works	C2	3.3m 34m²
T21	Alder	EM	12 0	4	5	5	4	400x2 200 (600)	Good	- Multi-stemmed tree - E.R.C 20	No works	B1	7.2m 163m²
T22	Crack Willow	EM	10 1	6	6	6	6	250 x2 200x3 (453)	Good	- Multi-stem tree - Poor form - E.R.C 10	Remove for development	C1	5.5m 93m²
T23	Norway Maple	SM	6 0	4	4	4	4	350	Good	- In hedgerow - E.R.C 10	No works	C1	4.2m 55m²
T24	Goat Willow	SM	4 0	4	4	4	4	100	Good	- Scrub trees - E.R.C 10	Remove for development	C1	1.2m 5m²

TREE SURVEY SCHEDULE (BS5837: 2012)

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				N	S	E	W						
G1	Ash Horse Chestnut Sycamore Pine	EM	≤16 0	6	6	6	6	≤550	Good	- Woodland group - Edge of compound - Eastern section subject to TPO - E.R.C 20	No works	B2	6.6m 137m²
G2	Norway Maple Pine	EM	≤15 0	5	5	5	5	≤500	Fair	- Root damage excavation - Low quality trees - E.R.C 10	Remove for development	C1	6m 113m²
G3	Scotch Pine Lawsons Cypress Norway Maple Cupressus Macrocarpa	M	≤10 2	5	5	5	5	≤650	Good	- Amenity group - E.R.C 10	No works	C2	7.8m 191m²
G4	Sycamore Hawthorn Ash	EM	≤10 0	4	4	4	4	≤400	Good	- Trees adjacent to excavation - E.R.C 10	No works	C2	4.8m 72m²
G5	Lime Alder Ash	EM	≤10 3	4	4	4	4	≤300	Good	- Group trees on fairway - E.R.C 10	No works	C2	3.6m 41m²
G6	Hybrid Black Poplar	EM	≤18 4	7	7	7	7	≤675	Good	- Extensive dead wood throughout crown - E.R.C 20	Remove all dead wood	B2	8.1m 206m²
G7	Alder	EM	≤6 0	3	3	3	3	≤275	Good	- On fairway - E.R.C 10	No works	C1	3.3m 34m²
G8	Horse Chestnut	EM	≤5 2	3	3	3	3	≤200	Fair	- Extensive bleeding cankers - Die back - E.R.C 10	Remove for development	C2	2.4m 18m²

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VIEWING CONDITIONS:	GOOD
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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						
G9	Norway Maple	EM	≤5 2	3	3	3	3	≤350	Fair	- On fairway - E.R.C 10	Remove for development	C2	4.2m 55m²
G10	Beech Southern Beech	EM	≤10 2	5	5	5	5	≤525	Good	- On fairway - Dead tree in group - E.R.C 20	Remove for development	B2	6.3m 124m²
G11	Beech Alder	EM	≤10 2	5	5	5	5	≤525	Good	- On fairway - E.R.C 20	Remove for development	B2	6.3m 124m²
G12	Norway Maple	EM	≤8 3	5	5	5	5	≤275	Good	- On fairway - E.R.C 10	Remove for development	C2	3.3m 34m²
G13	Alder Birch	EM	≤10 3	5	5	5	5	≤400	Good	- On fairway - Some die back in crowns - E.R.C 10	Remove for development	C2	4.8m 72m²
G14	Crack Willow	EM	≤16 3	4	7	5	7	≤525	Fair	- Lapsed pollards - Poor structural condition - E.R.C 10	Remove for development	C2	6.3m 124m²
G15	Horse Chestnut Scots Pine	EM	≤15 0	6	6	6	6	≤450	Good	- Stem bleeding cankers - E.R.C 10	Remove for development	C2	5.4m 92m²
G16	Elaeagnus Willow SP	M	≤4 0	2	2	2	2	≤200	Good	- Shrubbery group - E.R.C 10	Remove	C1	2.4m 18m²

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	KIRKBY VALLEY GOLF COURSE
CLIENT:	MAGHULL DEVELOPMENTS LTD
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	C WATKINS
ASSESSMENT DATE:	17/07/2019 – MAY 2021
VIEWING CONDITIONS:	GOOD
JOB REFERENCE:	19/AIA/KNOWSLEY/16

PAGE 6 OF 12

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						
G17	Scots Pint Hawthorn Horse Chestnut Sycamore	EM	≤6 0	5	5	5	5	≤275	Good	- Plantation bund - E.R.C 10	Remove	C2	3.3m 34m²
G18	Norway Maple Sycamore	EM	≤12 2	5	5	5	5	≤400	Good	- Linear group providing good screening - Subject to TPO - E.R.C 20	No works	B2	4.8m 72m²
G19	Norway Maple Sycamore	EM	≤12 2	5	5	5	5	≤400	Good	- Linear group providing good screening - Subject to TPO - E.R.C 20	No works	B2	4.8m 72m²
G20	Swedish Whitebeam Elm Hawthorn	EM	≤8 2	5	5	5	5	≤275		- Dying elm trees - E.R.C 10	Fell dying trees	C1	3.3m 34m²
G21	Lime	EM	≤8 2	5	5	5	5	≤325	Good	- Car park area - E.R.C 10	Remove for development	C2	3.9m 48m²
G22	Swedish Whitebeam Lime Sycamore	EM	≤10 2	5	5	5	5	≤450	Fair	- Stem damage - Decay development on number trees - E.R.C 10	Remove for development	C2	5.4m 92m²
G23	Hybrid Black Poplar Sycamore Hawthorn	M	≤18 0	10	10	10	10	≤675	Good	- Mainly Hybrid Black Poplar - Hawthorn hedge perimeter and Sycamore - E.R.C 20	No works	B2	8.1m 206m²
G24	Sycamore Hawthorn Elder	EM	≤8 0	4	4	4	4	≤300	Good	- Scrub group - Subject to TPO - E.R.C 10	Remove 3 trees to east to form new access	C2	3.6m 41m²
G25	Elder Elm								Poor	Dead trees next to bridge	Fell	U	N/A

TREE SURVEY SCHEDULE (BS5837: 2012)

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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						
G26	Ash Hawthorn Oak Swedish Whitebeam	EM	≤7 0	3	3	3	3	≤200	Good	- Scrub group in brambles - Access restricted - E.R.C 10	No works	C2	2.4m 18m²
G27	Hawthorn Elm	EM	≤4 0	3	3	3	3	≤200	Fair Poor	- Dead Elms in group - Unmanaged Hawthorn hedge - E.R.C 10	- Fell dead Elms - No works	C1	2.4m 18m²
G28	Beech	EM	≤18 0	5	5	5	5	≤500	Good	- Group of seven Beech trees - Bark damage - Dead wood throughout - E.R.C 20	Remove for 3 trees to north development	B2	6m 113m²
G29	Sycamore Alder	SM	≤5 0	3	3	3	3	≤200	Good	- In hedgerow - E.R.C 10	No works	C2	2.4m 18m²
G30	Hawthorn Alder Norway Maple	EM	≤8 0	4	4	4	4	≤300	Good	- In hedge - E.R.C 10	No works	C2	3.6m 41m²
G31	Wild Cherry Alder Sycamore	EM	≤14 3	5	5	5	5	≤300	Good	- Situated behind hedge - E.R.C 20	No works	B2	3.6m 41m²
G32	Alder Hawthorn Lime	EM	≤8 0	5	5	5	5	≤350	Good	- Behind hedge - E.R.C 10	No works	C2	4.2m 55m²
G33	Elm								Dead	Dead Elms	Fell within 1 month	U	N/A
G34	Sycamore Lime	EM	≤12 0	4	4	4	4	≤400	Good	- In hedgerow - E.R.C 10	Remove for development	C2	4.8m 72m²

TREE SURVEY SCHEDULE (BS5837: 2012)

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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						
G35	Lime Alder Elder	EM	≤12 0	4	4	4	4	≤400	Good	- In hedgerow - E.R.C 10	Remove for development	C2	4.8m 72m²
G36	Ash Hawthorn Cherry	EM	≤8 0	4	4	4	4	≤275	Good	- Low quality group - E.R.C 10	Remove for development	C2	3.3m 34m²
G37	Rowan	SM	≤4 0	2	2	2	2	≤75	Good	E.R.C 10	N/A	C1	0.9m 3m²
G38	Hybrid Black Poplar	M	≤19 3	8	8	8	8	≤700	Good	E.R.C 20	N/A	B2	8.4m 222m²
G39	Alder Wild Cherry Hawthorn Rowan Oak Black Poplar Elder	EM	≤12 0	5	5	5	5	≤350	Good	- Scrub group - E.R.C 10	Remove for development	C2	4.2m 55m²
G40	Sycamore Hawthorn Lime	EM	≤8 0	4	4	4	4	≤200	Good	- Scrub group - E.R.C 10	Remove for development	C2	2.4m 18m²
G41	Willow Poplar	EM	≤12 0	6	6	6	6	≤500	Good	- Access restricted due to vegetation - E.R.C 10	Remove for development	C2	6m 113m²
G42	Black Poplar Alder Birch	EM	≤18 0	5	5	5	5	≤450	Good	- Access restricted due to vegetation - E.R.C 10	Remove for development	C2	5.4m 92m²
G43	Hybrid Black Poplar Hawthorn	M	≤18 0	8	8	8	8	≤600	Fair	- Poplar canker - E.R.C 10	Remove for development	C2	7.2m 163m²

TREE SURVEY SCHEDULE (BS5837: 2012)

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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						
G44	Lombardi Poplar	M	≤18 0	5	5	5	5	≤600	Good	- Low quality group - E.R.C 10	Remove for development	C2	7.2m 163m²
G45	Birch Hawthorn Poplar Rowan Goat Willow	SM Y	≤2 0	1	1	1	1	≤75	Good	- Self-set scrub group - E.R.C 10	Remove for development	C2	0.9m 3m²
G46	Willow Lombardi Poplar	M	≤18 0	4	4	4	4	≤600	Fair	- Crack splits in stems - Poor structural form - E.R.C 10	Remove for development	C2	7.2m 163m²
G47	Hybrid Poplar Oak Sycamore Goat Willow Hawthorn	EM	≤15 0	5	5	5	5	≤450	Good	- Mostly self-set group - E.R.C 10	Remove for development	C2	5.4m 92m²
G48	Hybrid Poplar Oak Birch	M	≤18 0	8	8	8	8	≤600	Fair	- Poplar canker - Self-set Oak and Birch - E.R.C 10	Remove for development	C2	7.2m 163m²
G49	Horse Chestnut	EM	≤12 0	7	7	7	7	≤500	Good	- Inspection restricted by vegetation. - Bleeding canker - E.R.C 10	Remove for development	C2	6m 113m²
G50	Southern Beech x2	M	≤12 2S	5	5	5	5	≤400	Good	- Good form - E.R.C 20	Remove for development	B2	4.8m 72m²

TREE SURVEY SCHEDULE (BS5837: 2012)

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ASSESSMENT DATE:	17/07/2019 – MAY 2021
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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						
G51	Goat Willow Hawthorn	EM	≤4 0	3	3	3	3	≤100	Good	- Low quality group - E.R.C 10	Remove for development	C2	1.2m 5m²
G52	Goat Willow	EM	≤4 0	4	4	4	4	≤100	Good	- Low quality group - E.R.C 10	Remove for development	C2	1.2m 5m²
G53	Lombardy Poplar Birch Oak Goat Willow	M	≤16 0	4	4	4	4	≤450	Good	- Low quality group - E.R.C 10	Remove for development	C2	5.4m 92m²
G54	Goat Willow Poplar	EM	≤5 0	4	4	4	4	≤300	Good	- Low quality group - E.R.C 10	Remove for development	C2	3.6m 41m²
G55	Lombardy Poplar Sycamore Cherry Elder Willow	M	≤18 0	8	8	8	8	≤700	Good	- Inspection restricted due to vegetation - Viewed from field - E.R.C 20	Remove trees marked in red to accommodate proposed maintenance yard	B2	8.4m 222m²
G56	Willow Elder	M	≤10 0	6	6	6	6	≤500	Good	- Inspection restricted due to vegetation - Viewed from field - E.R.C 10	Remove for development	C2	6m 113m²

TREE SURVEY SCHEDULE (BS5837: 2012)

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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						
H1	Privet	M	4	0.5	0.5	0.5	0.5	75	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H2	Privet	M	2	0.5	0.5	0.5	0.5	75	Good	- Unmanaged hedge - E.R.C 10		N/A	N/A
H2.1	Hawthorn	M	2.5	0.5	0.5	0.5	0.5	75	Good	- Managed hedge - E.R.C 10		N/A	N/A
H3	Privet	M	2	0.5	0.5	0.5	0.5	75	Good	- Unmanaged hedge - E.R.C 10	Remove section for development	N/A	N/A
H4	Hawthorn	M	5	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H5	Hawthorn	M	5	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H6	Hawthorn	M	5	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H7	Hawthorn	M	5	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H8	Hawthorn Goat Willow	M	4	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H9	Hawthorn Goat Willow	M	4	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A
H10	Hawthorn Goat Willow	M	4 0	2	2	2	2	100	Good	- Unmanaged hedge - E.R.C 10	Remove for development	N/A	N/A

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

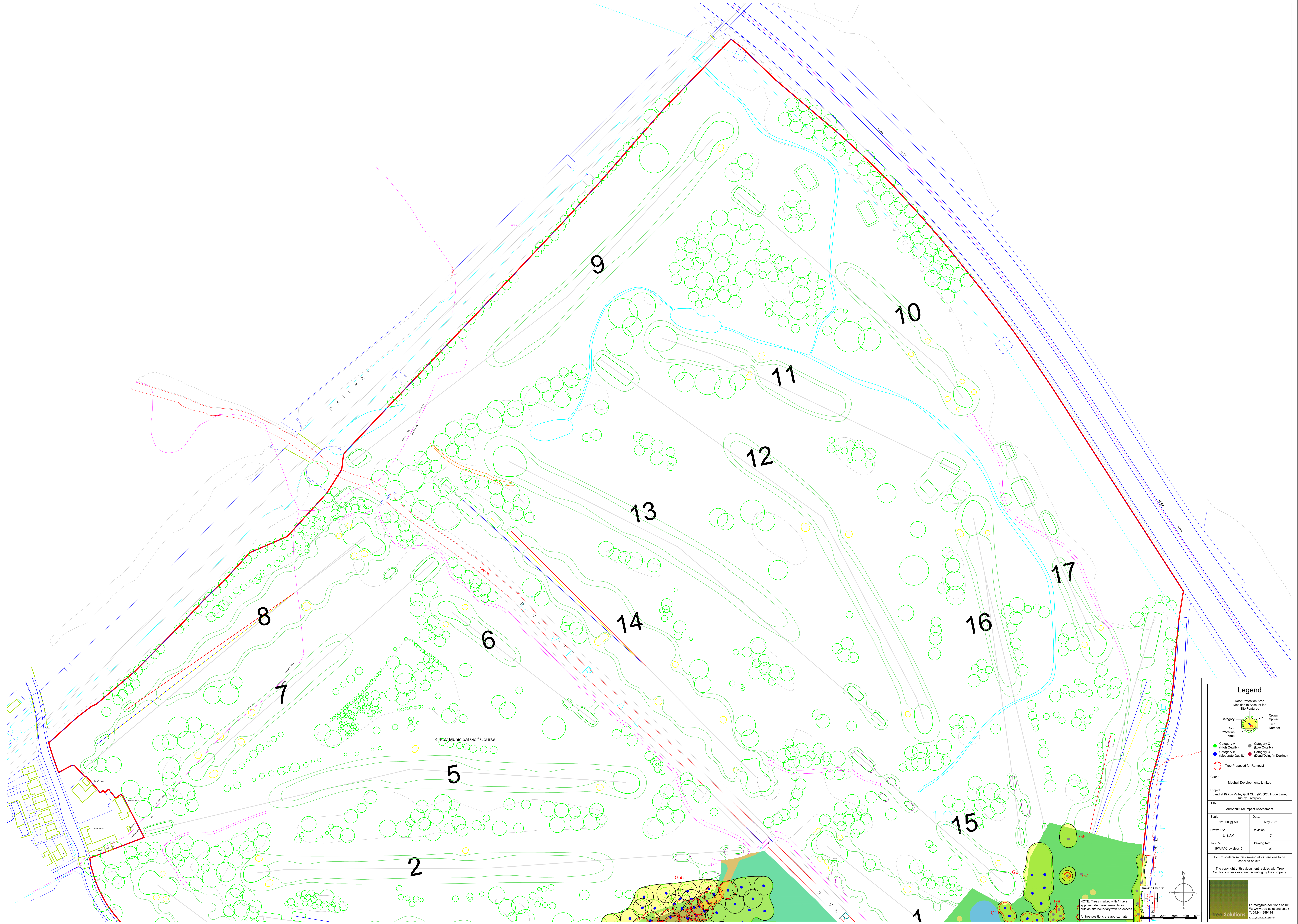
Preliminary Tree Constraints Plan

Appendix Three

Arboricultural Impact Assessment Plan



Legend Road Protection Area Modified to Account for Site Features	
Category 	Crown Spread Tree Number
Category A (High Quality) Category B (Moderate Quality) Category C (Poor Quality) Tree Proposed for Removal	Category D (Low Quality) Category U (Dead/Young/In Decline)
Client: Maghull Developments Limited	
Project: Land at Kinkry Valley Golf Club (KYGC), Ingoe Lane, Kinkry, Liverpool	
Title: Arboricultural Impact Assessment	
Scale: 1:1000 @ A0	Date: May 2021
Drawn by: L18.AM	Revision: C
Job Ref: 19/AM/Knowledge/16	Drawing No: 02
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Legend

Road Protection Area
Modified to Account for
Site Features

Category A (High Quality)	Category C (Low Quality)	Crown Spread Tree Number
Category B (Moderate Quality)	Category D (Poor/Very Poor)	
Tree Proposed for Removal		

Client:
Maghull Developments Limited

Project:
Land at Kirkby Valley Golf Club (RVGC), Inge Lane,
Kirkby, Liverpool

Title:
Arboricultural Impact Assessment

Scale:
1:1000 @ A0

Date:
May 2021

Drawn By:
LI & AM

Revision:
C

Job Ref:
19/AA/Kirkby16

Drawing No:
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NOTE: Trees marked with # have
approximate measurements as
outside site boundary with no access
All tree positions are approximate