

Tre Survey/Arboricultural Impact Assessment/Method Statement

Welsh Medium & Borrass Park CP School, Wrexham

Prepared for:

READ CONSTRUCTION

Our Ref: 20/AIA/WXM/254

August 2020

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1.0 INSTRUCTION

- 1.1 We have been instructed by Read Construction 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 The Welsh Medium and Borrass Park CP Schools, Wrexham. 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 stage 1 tree survey was carried out on 12/03/2020 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 Fifty-three individual trees (T1–T53) and fourteen groups (G1-G14) were surveyed and mapped on a Preliminary Tree Constraints & Impact Assessment Plan Ref: 20/AIA/WXM/254 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 the site layout plan Ref: 19076, Drawing No. BOR-TACP-AO-XX-DR-A-0700 (Rev 19) provided by TACP Architects.

2.0 STATUTORY CONTROLS & PLANNING POLICY

- 2.1 We have not ascertained if any trees on site are subject to a Tree Preservation Order. You are advised to seek clarification on this prior to undertaking any works to trees not granted consent by this planning application.

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 The site contains two existing primary schools and a doctor's surgery with associated vehicular access and parking areas.

4.0 DEVELOPMENT PROPOSAL

- 4.1 Extensions and alterations to the Welsh Medium & Borrass Park CP School.

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.

5.4.3 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 trees number 8 has been modified and is shown running 1m within the road to its north and extending further within the site where a more favourable rooting environment exists. All other RPA's are shown unmodified as there were no significant 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 phase one preliminary tree survey and provided the project architects with a report in which all existing trees and their respective Root Protection Areas (RPA) were identified and plotted on a Tree Constraints Plan and draft Impact Assessment Plan. This information formed part of a suite of reports submitted to WCBC as part of the pre-application process in which the tree officer has agreed in principle to all works in relation to trees. As such the principals of BS5837: 2012, WCBC Planning Policy EC4 and LPG 17 have been adhered to.

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
 - 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
 - Trees lost to development are of no significant value and are predominantly the incorrect species for school grounds i.e. hybrid poplar that would require removal in the near future irrespective of this proposal. The development works represent a betterment to the school grounds by ensuring replacement trees and landscaping more appropriate to the nature of the site.
- 10.2 The protection of retained trees will be in accordance with recommendation contained within the BS and as detailed on the Tree Protection Plan at **Appendix 4**.

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:	BORRAS PARK COMMUNITY PRIMARY SCHOOL, WREXHAM
CLIENT:	READ CONSTRUCTION
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	12/03/2020
VIEWING CONDITIONS:	CLEAR
JOB REFERENCE:	20/AIA/WXM/254

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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	Rowan	M	4.5 2E	2	2	1.5	2	160	G	- Small tree with no visual defects - E.R.C. 20	Remove for proposed car park	B2	1.9 12m²
T2	Rowan	M	4.5 2N	2	2	2	1.5	220	G	- Forms part of linear group at pedestrian entrance to school - No visual defects - E.R.C. 20	N/A	B2	2.6 22m²
T3	Rowan	M	5.5 1.5S	2.5	2.5	2.5	2	260	M	- Decay on main stem - Poor quality tree with limited safe & useful life expectancy in location - E.R.C. 0	Remove & replace with better quality specimen	C2	3 31m²
T4	Rowan	M	5.5 2S	2	3	2.5	2.5	290	G	- As T2 - Pedestrian barrier embedded in stem at base - E.R.C.20	N/A	B2	3.5 38m²
T5	Poplar (Hybrid)	EM	13 3S	4	5	5	4	430	G	- No visual defects - Not the most suitable tree species for location within school grounds - E.R.C. 20	Remove for development	B2	5 84m²

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)

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				N	S	E	W						
T6	Field Maple	EM	9 1.5S	1.5	2	2	2	310	G	- Located on frontage & offers amenity/screening value from Borrass Park Rd - E.R.C. 20	• N/A	B2	3.7 43m²
T7	Field Maple	EM	8 2N	2.5	3	1.5	2	270	M	- Poor structural crown form - E.R.C.10	• Remove & replacement – see landscape plan	C3	3.2 33m²
T8	Field Maple	EM	9 2.5S	3.5	4	4	4	430	G	- As T6 - Good quality prominent tree - E.R.C.20	• No works	B2	5 84m²
T9	Cherry	EM	6 1S	2	3.5	1.5	2.5	200	G	- Poor form - E.R.C.10	• Remove & replacement – see landscape plan	C3	2.4 18m²
T10	Rowan	EM	10 1N	2	2	1	2.5	200	G	- Poor form - Epicormic growth around base - E.R.C.10	• Remove & replacement – see landscape plan	C2	2.4 18m²
T11	Field Maple	EM	12	2.5	4	4	4.5	400	G	- Topped out at 2m in past resulting in multi-stemmed secondary crown - E.R.C.20	• N/A	B2	4.8 72m²
T12	Oak	M	15 2N	8	7	8	5	760	G	- Prominent mature tree on site boundary - High amenity & landscape value - Tarmac playground over primary rooting area to west - E.R.C.40	- N/A	A2	9 261m²
T13	Cherry	M	9 1.5W	5	1	3.5	4	350	G	- No visual defects - E.R.C.20	• N/A	B2	4.2 55m²

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				N	S	E	W						
T14	Field Maple	SM	6 2N	2	1.5	1	2.5	190	G	- Small tree with no defects - E.R.C.20	No works	B2	2.3 16m²
T15	Oak	M	15 3W	5	5	6	6	560	G	- Boundary mature tree screened by vegetation - Large diameter dead wood in crown - E.R.C.40	Remove dead wood	A2	6.7 142m²
T16	Field Maple	EM	10	3	1	3	2	210	G	- Within unused wildlife area - E.R.C.10	No works	C2	2.5 20m²
T17	Field Maple	EM	10	1.5	3	3	3	290	G	- Within unused wildlife area - E.R.C.10	No works	C2	3.5 38m²
T18	Ash	SM	9	2	2	2	2	220	G	- Within unused wildlife area - Not visually prominent - E.R.C.10	Remove & replacement – see landscape plan	C2	2.6 22m²
T19	Birch	EM	9	2	1.5	1.5	1.5	200	G	As T18	Remove & replacement – see landscape plan	C2	2.4 18m²
T20	Lime	SM	5	2	2	2	2	200	G	- Young well-established tree with good future potential - E.R.C.20	No works	B2	2.4 18m²
T21	Cherry	EM	6 1N	3	3	3	3	250	G	- No visual defects - E.R.C.20 .	No works	B2	3 28m²
T22	Cherry	M	5 1S	4.5	4.5	4	4	360	G	- No visual defects - E.R.C.20	Remove for proposed works & replace within school grounds	B2	4.3 59m²

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				N	S	E	W						
T23	Cherry	EM	8 1.5E	4.5	2	3.5	3.5	240	G	- No visual defects - E.R.C.20	Remove for proposed works & replace within school grounds	B2	2.9 26m²
T24	Sorbus	EM	6	1	2	2	0.5	160	G	- Small tree, easily replaced by new planting - E.R.C.10	Remove for proposed works & replace within school grounds	C2	1.9 12m²
T25	Sorbus	EM	3.5	1	1	1.5	1	150	G	As T24	Remove for proposed works & replace within school grounds	C2	1.9 10m²
T26	Cherry	M	9 0.5S	3.5	4.5	5	4	250x2 (354)	G	- Twin stemmed tree from 0.5m - E.R.C.20	Remove for proposed works & replace within school grounds	B2	4.2 57m²
T27	Cherry	EM	3.5 1S	1.5	2	0.5	1.5	190	G	- Young tree, planted too close to T26 with insufficient space to develop - E.R.C.10	Remove & replace	C2	2.3 16m²
T28	Malus	EM	5	2	2	3	3	160x2 (226)	G	- No visual defects - E.R.C.20	Remove for proposed works & replace within school grounds	B2	2.7 23m²
T29	Cherry	M	10 1S	4	4	4.5	2	300	G	- No visual defects - E.R.C.20	Remove for proposed works & replace within school grounds	B2	3.6 41m²
T30	Birch	M	9 1N	2.5	2	2	2	200	G	- Leans 20° east of vertical - Stem abuts planting cage - E.R.C.10	Remove for proposed works & replace within school grounds	C2	2.4 18m²
T31	Birch	SM	9	1.5	1.5	1.5	1.5	100	G	- No visual defects - Small tree, easily replaced - E.R.C.10	N/A	C2	1.2 5m²
T32	Birch	SM	7	1	1	1	1	80	G	As T31	N/A	C2	1 3m²

TREE SURVEY SCHEDULE (BS5837: 2012)

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				N	S	E	W						
T33	Birch	M	13 1S	2	2	3	2	310	G	- No visual defects - Forms part of linear group along pedestrian footpath - E.R.C.20	• No works	B2	3.7 43m²
T34	Cherry	EM	5 1S	2	2	3	2	310	G	As T33	• No works	B2	3.7 43m²
T35	Birch	M	13 1N	2	2	2	2	290	G	As T33	• No works	B2	3.5 38m²
T36	Cherry	M	9	5	5	3	4	310	G	As T33	• No works	B2	3.7 43m²
T37	Cherry	EM	4 1S	1.5	2	1.5	1.5	200	M	- Poor structural form - E.R.C.10	• Would eb best replaced	C2	2.4 18m²
T38	Poplar (Hybrid)	EM	13	2	2	2	2	290	G	- No visual defects - E.R.C.20	• Remove for proposed works & replace within school grounds	C2	3.5 38m²
T39	Apple	SM	2.5	1	2	2	1	120	M	- Small young tree within playground - E.R.C.10	• Remove for proposed works & replace within school grounds	C2	1.4 7m²
T40	Oak	EM	6	5	3	4.5	4.5	300	G	- No visual defects - Used by kids for climbing - Seat around base - E.R.C.20	• Remove for proposed works & replace within school grounds	B2	3.6 41m²
T41	Cherry	SM	4	3.5	3.5	3	2	190	G	- No visual defects - Small tree within playground - E.R.C.20	• No works	B2	2.3 16m²
T42	Rowan	SM	3.5	1	0.5	1.5	0.5	90	G	As T41	• No works	B2	1 4m²

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CLIENT:	READ CONSTRUCTION
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	12/03/2020
VIEWING CONDITIONS:	CLEAR
JOB REFERENCE:	20/AIA/WXM/254

PAGE 6 OF 8

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						
T43	Rowan	SM	3.5	1.5	1	1.5	1	140	G	• As T41	• No works	B2	1.7 9m²
T44	Rowan	EM	4	1	1	1	1	130	G	• Small young tree • E.R.C.10	• No works	C2	1.5 8m²
T45	Rowan	EM	4.5	1	1	1	1	130	G	• As T44	• No works	C2	1.5 8m²
T46	Rowan	EM	7 1S	1.5	2	2	2	240	G	• No visual defects • Small tree within playground • E.R.C.20	• No works	B2	2.8 26m²
T47	Wingnut	M	6.5 2S	4	5	3.5	4	490	G	• Prominent tree • E.R.C.20	• No works	B2	5.9 109m²
T48	Rowan	M	5	3	3	3	1.5	240	G	• No visual defects • E.R.C.20	• No works	B2	2.8 26m²
T49	Cherry	EM	4 2N	4	2.5	2.5	2	160	G	• Small tree, easily replaced • E.R.C.10	• Remove for proposed works & replace	C2	1.2 12m²
T50	Field Maple	EM	4.5 2N	3	3	2.5	2.5	200	G	• No visual defects • E.R.C.20	• Remove for proposed works & replace	B2	2.4 18m²
T51	Cherry	SM	2	1.5	2	2	2	110	M	• Small tree, easily replaced • E.R.C.10	• Remove for proposed works & replace	C1	1.3 5m²
T52	Rowan	SM	2	1	1	1	1	60	P	• Poor quality insignificant tree • E.R.C.10	• Remove for proposed works & replace	C1	0.7 2m²
T53	Birch	M	9	5	4	4	5	390	G	• Part of linear group – prominent on-site frontage • No visual defects • E.R.C.20	• No works	B2	4.7 69m²

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	BORRAS PARK COMMUNITY PRIMARY SCHOOL, WREXHAM
CLIENT:	READ CONSTRUCTION
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	12/03/2020
VIEWING CONDITIONS:	CLEAR
JOB REFERENCE:	20/AIA/WXM/254

PAGE 7 OF 8

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						
G1	Rowan Birch Malus Cherry	EM	≤6					≤170	G	- Small mixed copse - No visual defects - E.R.C.20	Remove 3 trees for proposed works	B2	2 3m²
G2	Poplar x 3 Birch x 1 Willow x 1	EM	≤12					≤240	G	- Closed canopy group with exposed roots, buttresses - Inappropriate species within school grounds - E.R.C.10	No works	C2	2.9 26m²
G3	Willow x 3 Poplar Birch x 2	EM	≤4	2	2	2	2	≤210	G	As G2	No works	C2	2.5 20m²
G4	Hybrid Poplar	EM	≤11	2	2	2	2	≤270	G	- Planted either side of pedestrian walkway - Raised roots about to displace tarmac surface dressing - Inappropriate tree species for school grounds and adjacent to high value and frequent target - E.R.C.20	Remove & replacement – see landscape plan	C2	3.2 33m²
G5	Malus Cherry	Y	1.5					≤90	M	- Newly planted trees - E.R.C.10	Remove & replacement – see landscape plan	C3	1 4m²
G6	Ash x 1 Cherry x 1 Maple x 2	Y/S M	≤3.5					≤90	M	- Young insignificant trees 1 Dead - E.R.C.10	Remove & replacement – see landscape plan	C3	1 4m²
G7	Hybrid Poplar	EM	≤13	3	3	3	3	≤280	G	- Small group forming closed canopy - As G4 - Inappropriate tree species for school grounds and adjacent to high value and frequent target - E.R.C.10	Remove & replacement – see landscape plan	C2	3.4 35m²

TREE SURVEY SCHEDULE (BS5837: 2012)

Tree Solutions

Arboricultural Consultants

SITE:	BORRAS PARK COMMUNITY PRIMARY SCHOOL, WREXHAM
CLIENT:	READ CONSTRUCTION
BRIEF:	ARBORICULTURAL IMPACT ASSESSMENT

SURVEYOR:	A. HENDERSON
ASSESSMENT DATE:	12/03/2020
VIEWING CONDITIONS:	CLEAR
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PAGE 8 OF 8

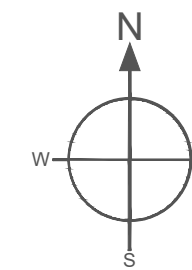
TREE NO. T - Tree G - Group H - Hedge	SPECIES (COMMON NAME)	AGE	HEIGHT (m) + CROWN CLEARANCE/ DIRECTION OF GROWTH (N.S.E.W)	RADIAL CROWN SPREAD (m)				STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS	MANAGEMENT	CATEGORY & SUB- CATEGORY GRADING BS 5837	BS 5837 RADIUS (m) RPA (m²)
				N	S	E	W						
G8	Birch Sorbus	Y	2					≤30	G	- Newly planted trees - E.R.C.10	No works	C3	0.5
G9	Sorbus Hazel Birch Cherry Willow Pine	SM / EM	≤10					≤190	G	- Mixed group in Forest School/Outdoor Classroom - E.R.C.20	Remove 2 no trees marked to accommodate MUGA	B2	2.3 60m²
G10	Pine Larch Birch Rowan	EM	≤8					≤200	G	As G9	Remove 6 no trees marked to accommodate MUGA	B2	2.4 18m²
G11	Field Maple Ash	EM	≤13					≤250	G	As G10	No works	B2	3 28m²
G12	Cypress	EM	≤6	1	1	1	1	≤200	M	- Insignificant unattractive tree located within confined rooting environment - E.R.C.10	Remove	C3	2.4 18m²
G13	Liquidambar Birch Hawthorn	SM / EM	≤7					≤200	G	- Mixed group offering amenity and screening value along site frontage - E.R.C.20	No works	B2	2.4 18m²
G14	Birch	M	9	2.5	2.5	2.5	2.5	≤320	G	- Linear group along site frontage - Offer amenity & landscape value - E.R.C.10	No works	C3	3.8 46m²

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)

Crown Spread
Tree Number

Root Protection Area

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

Client:	Read Construction	
Project:	Borras Park Community Primary School, Wrexham	
Title:	Preliminary Tree Constraints Plan	
Scale:	1:500 @ A1	Date: March 2020
Drawn By:	NB	Revision: -
Job Ref:	10/AIA/WXM/254	Drawing No: 01
Do not scale from this drawing all dimensions to be checked on site.		
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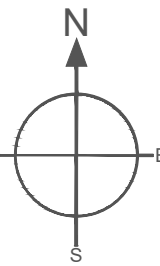
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Appendix Three

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 U
(Dead/Dying/In Decline)
- Tree Proposed for Removal
- Crown Spread
- Tree Number
- Root Protection Area

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

Client: Read Construction

Project: Borras Park Community Primary School, Wrexham

Title: Arboricultural Impact Assessment

Scale: 1:500 @ A1

Date: August 2020

Drawn By: NB & AM

Revision: -

Job Ref: 20/AIA-WXM/254

Drawing No: 02

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Appendix Four

Tree Protection Plan



Tree Protective Fencing Specification

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREES & GROUPS PLANNED ARE THREE THINGS ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND THE BARRIERS AS A TREE PRESERVATION ORDER. CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION. ANY INFRINGEMENT INTO THE PROTECTED AREA MUST BE NOTED BY THE SIGNATURE OF THE LOCAL PLANNING AUTHORITY.



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)

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

2.0M high Heras (with extra central support bar) mounted on scaffold poles (driven in to the ground) and secured with anti-tamper bolts – as illustrated.

Client:	Read Construction	
Project:	Borras Park Community Primary School, Wrexham	
Title:	Tree Protection Plan	
Scale:	1:500 @ A1	Date: August 2020
Drawn By:	NB & AM	Revision: -
Job Ref:	20/AIA/WXM/254	Drawing No: 03

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Appendix Five

Tree Protective Measures/Method Statement

SEQUENCE OF OPERATIONS

From commencement of the above development, the following methodology shall be implemented in the manner and sequence described:

1. Tree Surgery Works
2. Erect temporary protective fencing
3. Main construction phase
4. Removal of temporary fencing
5. Landscaping within RPA's

1. Tree Surgery Works

1. Before the erection of the temporary protective fencing, all tree removal shall be implemented in accordance with the Tree Survey Schedule at **Appendix 1**
2. All possible efforts must be made to prevent damage to retained trees including potential root incursion or compaction caused by vehicle access.
3. All arboricultural works shall conform to the recommendations of BS 3998 (2010) 'Recommendations for Tree Work'
4. All operatives shall be equipped with and use personal protective equipment (PPE) in accordance with current Health & Safety Executive current directives and industry codes of practice.
5. Performance of all arboricultural operations and use of equipment shall be in accordance with current Health & Safety Executive current directives and industry codes of practice

2. Erect Temporary Tree Protective Fencing

1. Prior to commencement of any construction, preparation, excavation or material deliveries the main contractor shall erect the temporary protective fencing as detailed in the 'Tree Protection Specification' and in the location indicated on the Tree Protection Plan.
2. Wirral Council Tree Officer is to be given 5 days written notice as soon as all protective fencing has been erected in order to inspect the specification and location. An inspection report will be completed and returned to the LPA Tree Officer for approval. Any damage occurring to protective fencing during the demolition or construction phase shall be made good by the main contractor

5. Main Construction Phase

1. There shall be no storage of construction material, site parking, site accommodation or equipment in any area designated as the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing
2. No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10 metres of the trunk of a tree that is to be retained. No fires will be lit
3. The site agent shall supervise deliveries by self-loading crane, with vehicles positioned in such a manner that retained trees are not at risk of damage

Cement Mixing

- The cement mixer will be laid on top of plywood boards in a position outside the RPA of any trees. The mixer will be kept in this position throughout all development work.

Avoiding Damage to Stems and Branches

- Care shall be taken when planning site operations in proximity to trees to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious injury resulting in safe retention impossible

On Site Storage of Spoil and Building Materials

- Prior to and during all site construction works no spoil will be stored and no cement mixing will take place within the Root Protection Area of any tree on or adjacent to the site even if proposed site work is to be within the crown spread. Any encroachment within this protected area will only be with the prior agreement of the LPA Arboricultural Officer

8. Remove all Temporary Tree Protective Fencing

1. Tree Protective fencing will only be removed upon completion of all construction work and once all machinery associated with the works has left site.

9. Landscaping within RPA of Trees

1. There shall be **no rotovating** of ground within any area designated as a Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) and enclosed by Temporary Protective Fencing.
2. No hard landscaping works or excavation for cables or any other service should be installed within the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) without the written consent of the LPA

Useful Contacts

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LPA Arboricultural Officer

Name: Jon Brewin
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Email: jon.brewin@wrexham.gov.uk

TREE PROTECTIVE FENCING

- 1 Before the commencement of any site excavations and subsequent construction works (other than those set out in the schedule of tree works contained in this document), protective fencing will be erected as detailed on the Tree Protection Plan and as specified below. The LPA Tree Officer will be given 5 days' notice upon completion of the fencing to inspect and approve prior to the commencement of any site works.
- 2 The fencing will consist of a scaffold framework in accordance with Figure 2 of BS 5837 – 2012 (illustration below) comprising a metal framework, both vertical and horizontal, well braced to resist impacts. Vertical tubes will be spaced at a maximum interval of 3m. Onto this, weldmesh panels shall be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not considered resistant to impact and for this reason will not be used. The site manager or other suitably qualified appointed person will be responsible for inspecting the protective fencing daily; any damage to the fencing or breaches of the fenced area will be rectified immediately.
- 3 Clearly legible weatherproof signage, stating "Protected Trees – Exclusion Zone" shall be attached to the fencing 1.5m from the ground, facing out of the Tree Protection Zone located at regular intervals along the fence line
- 4 The fencing will remain in place until completion of all site works and then only removed when all site traffic is removed from site
- 5 Other than works detailed within this method statement or approved in writing by the Local Planning Authority (LPA), no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

Protective Fencing Detail

The fence types are shown on the Tree Protection Plan with the following colour key: -

1. **Magenta** - 2.0M high heavy-duty Heras panels (with extra central support bar) mounted on scaffold poles (driven into the ground) and secured with anti-tamper bolts – as illustrated below.



Tree Protective Fencing Specification