



BS 5837:2012 Arboricultural Survey and Impact Assessment Report

Riverpark Road, Manchester
for:

Kellen Homes Limited

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BS 5837:2012 Arboricultural Survey and Impact Assessment Report

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For:	Kellen Homes
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1.0 Non-Technical Summary

1.1 Arboricultural Survey

1.1.1 The site is currently a multi-let industrial estate and business park located off Riverpark Road in northeast Manchester and comprises industrial units and warehouses. The site is mainly level, however, there is a steep wooded railway embankment along the northern boundary.

1.1.2 A tree survey in accordance with BS 5837:2012 was carried out by Enzygo Ltd. in February 2024. 28 trees and four tree groups were surveyed within the site and within 15m of the site boundary. The surveyed trees are located along the northwestern and northern boundaries to the site. The species surveyed were mainly hybrid black poplar, ash, sycamore, and hawthorn, with trees and groups being early mature age category and of low and moderate arboricultural value.

1.2 Development Proposals

1.2.3 The Client proposes the development of 498 residential units over five blocks of flats in the West of the site and terraced and semi-detached units along the south, across the centre and in the East. Five vehicular access points of Riverpark Road, car parking and a scheme of landscaping form part of the proposals.

1.3 Arboricultural Impact Assessment

1.3.1 The development including the site-set-up and all demolition and construction operations will require the removal of 3 trees of low value and 385m² of tree groups (80% of moderate value and 20% of low value) along the southern parts of the tree belt along the northern boundary of the site, with the majority of the tree groups retained. This is expected to have an overall low impact on the character of the site and local landscape.

1.4 Recommendations

1.4.1 Adequate protective measures to *BS 5837 (2012) Trees in relation to design, demolition and construction* should be specified and provided in accordance with an Arboricultural Method Statement in order to minimise the risk of any adverse indirect effect on retained trees on site during operations linked to the development.

2.0 Overview

2.1 Introduction

2.1.1 Enzygo Limited have been commissioned by Kellen Homes Limited to prepare an Arboricultural Survey Report and Impact Assessment in accordance with BS 5837:2012 for the site off Riverpark Road in support of a planning application for the development of 498 residential units across the site.

2.1.2 This report should assist the client team and local authority in understanding the extent and quality of tree cover on site, as well as the impact the development proposals may have on trees on and around the site, and any subsequent effects on the wider landscape.

2.2 Structure of the Report

2.2.1 This report presents site-specific information as follows:

- Chapter 2.0 provides a brief description of the site and its location.
- Chapter 3.0 summarises the planning background, including national and local planning policies and any relevant planning history of the site.
- Chapter 4.0 summarises the findings of the Arboricultural Survey, describing the overall species mix, age, condition, and value of the trees recorded on site.
- Chapter 5.0 provides an assessment of the impact current site layout proposals may have on any existing trees, both on and off site, with general recommendations provided for the protection of any retained trees.

2.2.2 Supportive of and appended to the report are the Tree Constraints Plan in Appendix 1, the Arboricultural Survey Schedule in Appendix 2, relevant site photographs in Appendix 3 and a Tree Impacts Plan in Appendix 4.

2.2.3 The methodology underlying the Arboricultural Survey and Impact Assessment is described in Appendix 5.

2.3 Site Description

- 2.3.1 The site is located approximately 1km northeast of Etihad Stadium in Manchester, in an industrial and suburban location. The site is accessed via Riverpark Road in the South and has a view of the Philip's Park Cemetery and River Medlock on the opposite side of the road. Briscoe Lane forms the western boundary, with a railway embankment forming the boundary in the North.
- 2.3.2 The application boundary for the site is approximately 7.4 hectares (18.3 acres). The site is currently the River Park Trading Estate and is a multi-let industrial estate, comprised of office buildings, commercial units and warehouses.
- 2.3.3 The site topography is mainly level, with a steep embankment along the northern boundary which slopes upwards towards the adjacent railway land. There is no public right of way crossing the site, but views into the site from adjacent roads are open.

2.4 Project Description

- 2.4.1 The Client proposes the development of 498 residential units over five blocks of flats in the West of the site and terraced and semi-detached units along the south, across the centre and in the East. Five vehicular access points of Riverpark Road, car parking and a scheme of landscaping form part of the proposals.
- 2.4.2 Further details regarding the proposed development can be found in the information submitted with the planning application.

3.0 Planning background

3.1 National Planning Policy Framework (December 2024)

3.1.1 The National Planning Policy Framework (NPPF) published by the government and updated in December 2024 sets out the framework objectives for development in England. These are used by Local Planning Authorities (LPA) both during the preparation of their local planning policies as well as to guide them in making individual decisions for Planning Applications.

3.1.2 The NPPF sets out several objectives concerning the natural environment, including trees, woodland and hedgerows. In addition to broad objectives addressing biodiversity and the challenges posed by climate change (e.g. flood resilience, species selection), the following paragraphs ask for the recognition of existing trees in relation to development:

- Paragraph 136 states that *“Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure (...) that existing trees are retained wherever possible.”*
- Paragraph 187 requests that *“Planning policies and decisions should contribute to and enhance the natural and local environment by [...] recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland”*.

3.2 Local Planning Policy

3.2.1 Policy EN 9 of the Manchester City Council Core Strategy Development Plan (Adopted July 2012) states that the council *“will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area”*. Additionally, Policy EN 15 states that the council’s objective is *“to protect and conserve the City’s existing trees and woodlands and they aim for a net increase in trees across the City”*.

4.0 Arboricultural Survey

4.1 Overview

- 4.1.1 The arboricultural survey in accordance with BS 5837:2012 was carried out by Hazel Irving *FdSc Arboriculture* in March 2024. At the time of the survey any deciduous trees were not in leaf.
- 4.1.2 Four groups and 28 individual trees were recorded during the walk-over survey. The trees are located along the site boundary and are concentrated on the railway embankment along the northern boundary of the site.
- 4.1.3 A plan of the site illustrating the location, canopy spread, and Root Protection Area of each feature is included in Appendix 1, with the schedule in Appendix 2 providing survey details of each tree.
- 4.1.4 A selection of photographs showing both the site and notable individual trees and tree groups is included in Appendix 3 – Site photographs.

4.2 Tree species, age and overall condition

- 4.2.1 The majority of the trees within the boundary of the site are the non-native “railway poplar”, a cultivar of hybrid black poplar, which is commonly found along railways. Additionally, there are silver birch and hawthorn which are also commonly used in landscaping as low maintenance trees species.
- 4.2.2 The majority of the trees are mature, with self-set trees growing beneath them. It appears that some management of the trees has been undertaken in areas close to the car park, as there is evidence of some pruning back of the lower branches. Overall, the trees appear in good physiological and structural condition.

4.3 Tree quality, value and significance on site and local landscape

- 4.3.1 The quality of the trees on the site is moderate, with many mature trees being placed in Category B, as per the BS5837:2012 recommendations. They form a significant screen between the site and the railway line, as well and Briscoe Lane in the West. Low value trees are scattered between them and along the southern boundary with Briscoe Lane.

4.4 Root Protection Areas (RPA)

4.4.1 The Root Protection Areas for each Category A to C tree and tree group has been calculated based on measured stem diameters. Both the radius and the area of each RPA are shown on the plan included in Appendix 1 and listed in Appendix 2 - Arboricultural Survey Schedule.

4.5 Tree Preservation Orders (TPO) and Conservation Areas

4.5.1 The online tool provided on the Manchester City Council website has confirmed in April 2025 that none of the trees included in this survey are protected by Tree Preservation Order. The site is not located within a Conservation Area.

4.6 Non-statutory Designations

4.6.1 A check has been undertaken on the 3rd April 2025 for veteran trees on the site, using the online DEFRA Magic map, as well as the Tree Inventory interactive map, produced by the Woodland Trust. This search revealed no ancient woodlands or veteran trees on or close to the site.

5.0 Arboricultural Impact Assessment

5.1 Development proposals

- 5.1.1 This AIA is based on the development proposals as shown on Kellen Homes' "CAD Site Layout" drawing ref. KH/RP/CSL/01 Revision Q dated March 2025.

5.2 Tree removal

- 5.2.1 A total of 3 individual trees, 66m² of group G001, 202m² of group G002 and 117m² of group G004 (385m² total for all groups) would require removal to facilitate all aspects of the development proposals. Some canopy reduction and lifting works will also be required on 7 retained trees to facilitate construction of roads, pavements and parking areas.

No.	BS Cat.	TPO	Reason for removal
G001	C1.2	None	Remove 66m ² to facilitate construction Block A
G002	B2	None	Remove 202m ² to facilitate construction of roads, pavements and car park
G004	B2	None	Remove 31m ² to facilitate construction of housing block. Remove 86m ² to facilitate private gardens, road and car park
T003	C1	None	Fell to facilitate construction of Block D
T004	C1	None	Fell to facilitate construction of car park.
T006	B1	None	Carry out canopy reduction, and lift canopy to have min 3.0m clear stem from ground to facilitate car park
T010	B1	None	Carry out canopy reduction, and lift canopy to have min 4.0m clear stem from ground to facilitate car park
T020	B1	None	Carry out canopy reduction, and lift canopy to have min 4.0m clear stem from ground to access road
T024	C1	None	Carry out canopy reduction, and lift canopy to have min 4.0m clear stem from ground to access road and parking
T025	C1	None	Reduce crown to stop overhang of private garden, and lift canopy to have min 4.0m clear stem from ground to access road
T026	C1	None	Fell to facilitate private garden
T027	C1	None	Reduce crown to stop overhang of private garden, and lift canopy to have min 4.0m clear stem from ground to access road

Table 1 –Summary of proposed tree removal

- 5.2.2 The tree removal is concentrated in the northwestern corner of the site where it will have a low effect on the canopy cover along Briscoe Lane and the railway bridge here.

5.3 Residual impact of development on retained trees

5.3.3 Indirect effects on below ground parts (roots) of retained trees is likely to be limited where existing hard surfacing has limited the spread of roots into the site, in particular of trees located at the bottom of the railway embankment. Indirect effects during construction are further limited by the steep gradient of the embankment which is likely to discourage operations from encroaching in this part of the site.

5.3.1 Unless adequate protection measures in line with BS5837 (2012) *Trees in relation to design, demolition and construction* the following should be noted:

- Construction operations near retained trees along the western site boundary (t001, T002, G001) and the bottom of the railway embankment (retained sections of G002 and trees T023 to T028) are likely to cause accidental damage of tree trunks and low hanging branches.
- Vehicle and plant movement during construction may further cause ground compaction which could lead to irreversible damage of tree roots and the rooting environment within the RPA of retained trees in particular along the western site boundary.
- Excavations for underground services may have an impact where they are proposed within the RPA of retained trees. Proposed above ground services may further conflict with parts of tree canopies. No utilities plans have been supplied for the purpose of this impact assessment.

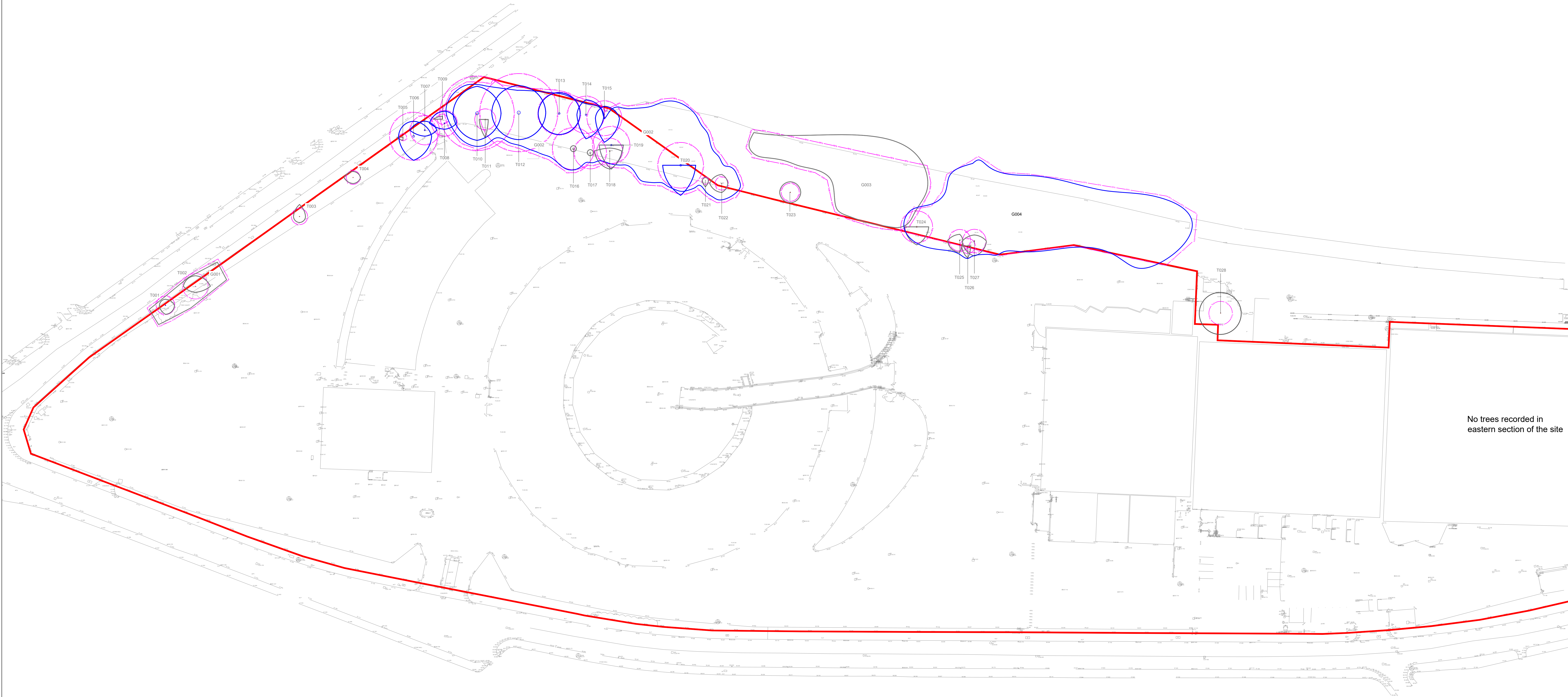
5.4 Recommendations

5.4.1 An Arboricultural Method Statement should be prepared, detailing all protective measures required to adequately protect all retained trees during site set-up, demolition and construction. This should be accompanied with an easy-to-read Tree Protection Plan which can be used to set up any protection measures on site.

5.4.2 Protective measures may include;

- access facilitation pruning in line with BS3998 (2010) *Tree Works Recommendations*
- a protective barrier to the Default Specification as described in BS5837 (2012);
- no dig construction methodologies for new hard surfacing to BS5837 (2012); and
- the sensitive design and installation of utilities, as per National Joint Utilities Group “*Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees*” (NJUG Volume 4, 2007).

6.0 Appendix 1 – Tree Survey and Constraints Plan



NOTES

- Do not scale from this drawing for construction purposes
- This drawing is to be read in conjunction with all relevant drawings and documents associated with this project.
- All surveyed information including levels and layout is provided by others
- All existing and proposed dimensions, levels and locations to be checked and verified by the main contractor on site prior to the commencement of the works and any anomalies reported to the engineer.

KEY - Tree Survey and Tree Constraints Plan

Tree Categories BS 5837 (2012)

Tree Category A

Tree Category B

Tree Category C

Tree Category U

Root Protection Area (RPA)

No trees recorded in eastern section of the site

PL01	29/03/24	For Planning	HI	VM	VM
Rev	Date	Description	DRA	CHK	APP

Project
Riverpark Road, Manchester

Client
Kellen Homes Ltd.

Drawing Title
Tree Constraints Plan

Status	Date	Scale
For Planning	29/03/24	1:500 @ A0

Drawn	Designed	Checked	Approved
HI	VM	VM	VM

DWG No.	Revision
920.001.ENZ.XX.00.DR.AR.45.101	PL01



BRISTOL 01454 269 237
MANCHESTER 0161 413 6444
SHEFFIELD 0114 321 8161
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0 10 20 30 40 50m
Scale 1:500

7.0 Appendix 2 - Arboricultural Survey Schedule

7.1 Information recorded and symbols used:

Ref	Sequential tree reference as per Tree Survey Plan
Species	Common name (<i>Scientific name</i>)
Ht (m)	Estimated tree height in metres
Stem dia (cm)	Stem diameter measured in accordance with BS5837:2012 Annex C
Canopy Spread	Estimated branch spread (in metres) at four cardinal points
Clear crown	Height of the lowest branch(es) including cardinal point(s) where applicable
Life stage	YNG -Young SM -Semi-mature EM - Early mature M - Mature OM - Over-mature (including veteran trees)
RULE	Remaining useful life expectancy estimated in years
Cond.	G - Good F - Fair P - Poor
Notes	Including observations and notes on: Defects and other structural and physiological abnormalities, nesting birds, bat roost potential (where possible), notes on surrounding land incl. soil compaction, Tree Preservation Orders and Conservation Area (where information is available), notes on limited access/inspection, off site location and preliminary management recommendations (in italics)
BS Cat.	Retention category and sub-category in accordance with BS5837:2012 A - High Quality1 - Mainly arboricultural value B - Moderate Quality2 - Mainly landscape value C - Low Quality3 - Mainly cultural value U - Unsuitable for retention
RPA (m)	Radius of Root Protection Area calculated in metres (Radius of RPA= 12x stem diameter). This will usually be capped at 15m for trees with a stem diameter larger than 1.25m
RPA (m²)	Area of Root Protection Area (relevant if RPA is not circular due to pre-existing site conditions, incl. water courses, retaining structures and building foundations). Rounded up to nearest m ² . This will usually be capped at 707m ² for trees with a stem diameter larger than 1.25m.

Ref	Species	Ht (m)	Stem dia (mm)	Canopy spread (m)				CC	Life stage	RULE	Cond.	Notes (Including preliminary management recommendations)	BS Cat.	RPA (m)	RPA (m ²)
				N	E	S	W								
T1	Silver birch (Betula pendula)	8	260	2.0	3.0	3.0	2.0	1	Early mature	50+ Years	Good	Single stemmed specimen kinked at base but self-righted. Lowest branch is snapped and hanging up on the boundary fence. Some occluding bark damage on side of stem at 2m.	C1	3.1	30
T2	Silver birch (Betula pendula)	9	300, 200	3.5	5.0	2.0	4.0	2	Early mature	50+ Years	Good	Twin stemmed from base with canopy overhanging the boundary. Previously pruned back over boundary with stubs. No major visible defects.	C1	4.32	56
T3	Ash (Fraxinus excelsior)	6	80#	4.0	2.0	2.0	2.0	8	Semi mature	20+ Years	Good	A multi-stemmed specimen with evidence of prior pruning over carpark. Of low arboricultural value.	C1	2.7	23
T4	Sorbus sp.	5	60, 90, 100, 110, 60	2.0	2.5	2.0	3.0	5	Semi mature	50+ Years	Good	A multi-stemmed specimen with evidence of pruning in lower branches. No major visible defects.	C1	2.3	17
T5	Sycamore (Acer pseudoplatanus)	6	100	0.0	0.0	1.0	2.0	1	Semi mature	20+ Years	Good	Single stemmed tree growing under canopy of adjacent larger specimen. Heavily suppressed. Canopy overhanging boundary towards available light. Of limited Arboriculture value.	C1	1.2	5
T6	Common lime (Tilia X vulgaris)	12	340, 320, 200, 280, 210, 250	5.0	6.0	8.0	5.0	6	Mature	50+ Years	Good	Multi-stemmed from 1m with some included bark. Some crossing and rubbing branches, becoming fused further up. Canopy overhanging boundary. Well balanced. No major visible defects.	B1	8.0	201

Ref	Species	Ht (m)	Stem dia (mm)	Canopy spread (m)				CC	Life stage	RULE	Cond.	Notes (Including preliminary management recommendations)	BS Cat.	RPA (m)	RPA (m ²)
				N	E	S	W								
T7	Common lime (Tilia X vulgaris)	10	100, 130, 80, 80, 90, 50, 80, 330	3.0	4.0	2.0	5.0	8	Mature	50+ Years	Good	A multi-stemmed specimen from ground level. There is a main central bole. Some evidence of pruning over the car park with a stub left. No major visible defects.	B1	4.9	75
T8	Common lime (Tilia X vulgaris)	11	360	4.0	4.0	2.0	5.0	1	Mature	50+ Years	Good	Single stemmed and vertical with a well-balanced crown. No major visible defects.	B1	4.3	58
T9	Wild cherry (Prunus avium)	8	130, 60	1.0	0.0	0.0	3.0	2	Early mature	20+ Years	Good	Twin stemmed tree from ground level. Suppressed by adjacent mature tree and overhanging boundary.	C1	1.7	9
T10	Black hybrid poplar (Populus x canadensis)	18	100, 30	9.0	8.0	9.0	8.0	1	Early mature	50+ Years	Good	Single stemmed and vertical with a well-balanced crown. No major visible defects.	B1	12.4	483
T11	Black hybrid poplar (Populus x canadensis)	10	270, 100	0.0	1.0	6.0	2.0	2	Early mature	20+ Years	Good	Twin stemmed from ground level, leaning south due to suppression from adjacent mature tree.	C1	3.5	38
T12	Black hybrid poplar (Populus x canadensis)	18	1,080	9.0	9.0	9.0	9.0	1	Early mature	50+ Years	Good	An impressive mature specimen. Main stem bifurcates at 1.5m but is fused to a height of 3m. Deadwood throughout crown. No major visible defects.	B1	13.0	531
T13	Black hybrid poplar (Populus x canadensis)	15	590	7.0	7.0	7.0	7.0	1	Early mature	50+ Years	Good	Single stemmed and vertical with a well-balanced crown. Bifurcated at 5m. Deadwood and deadwood stubs in crown.	B1	7.1	158
T14	Black hybrid poplar (Populus x canadensis)	14	520	5.0	6.0	8.0	3.0	1	Early mature	50+ Years	Good	Single stemmed specimen, vertical with an asymmetric crown. Deadwood in lower crown. No major visible defects.	B1	6.2	121

Ref	Species	Ht (m)	Stem dia (mm)	Canopy spread (m)				CC	Life stage	RULE	Cond.	Notes <i>(Including preliminary management recommendations)</i>	BS Cat.	RPA (m)	RPA (m ²)
				N	E	S	W								
T15	Black hybrid poplar (Populus x canadensis)	16	480	4.0	5.0	8.0	3.0	1	Early mature	50+ Years	Good	Single stemmed with a slight lean towards the south. Mainly branching on the south side of the stem, as it reaches towards the light. No major visible defects.	B1	5.8	106
T16	Black hybrid poplar (Populus x canadensis)	3	420, 410	1.0	1.0	1.0	1.0	2	Early mature	<10 years	Poor	Pollarded Poplar with some whippy regrowth present. Hollowing and fungal crusts forming on bark. Poor vitality. Good ecological value.	C2	7.0	154
T17	Black hybrid poplar (Populus x canadensis)	6	450	1.0	1.0	1.0	1.0	1	Early mature	10+ Years	Fair	A southeast leaning tree that has been previously pollarded. Now, there are new stems growing vertically from the original main stem. Hollowing in main stem.	C2	5.4	92
T18	Weeping willow (Salix x sepulcralis Chrysocoma)	5	360	1.0	4.0	6.0	5.0	1	Early mature	50+ Years	Good	Single stemmed and suppressed by adjacent trees. Hollowing in main stem at 1m and 2.5m. Previously pruned back on south side of canopy over the car park.	C1	4.3	58
T19	Black hybrid poplar (Populus x canadensis)	16	520	0.0	4.0	8.0	4.0	1	Early mature	50+ Years	Good	A single stemmed specimen with a lean to the south. Roots visible at the surface, however, appear stable at present. No major visible defects.	C1	6.2	121
T20	Black hybrid poplar (Populus x canadensis)	18	630	0.0	5.0	10.0	6.0	1	Early mature	50+ Years	Good	Single stemmed and leaning south. Evidence of pruning in lower branches over the carpark. Deadwood stubs.	B1	7.6	181
T21	Hawthorn (Crataegus monogyna)	4	100	1.0	1.0	2.0	1.0	1	Early mature	50+ Years	Good	Single stemmed and vertical with a well-balanced crown. No major visible defects.	C1	1.2	5

Ref	Species	Ht (m)	Stem dia (mm)	Canopy spread (m)				CC	Life stage	RULE	Cond.	Notes (Including preliminary management recommendations)	BS Cat.	RPA (m)	RPA (m²)
				N	E	S	W								
T22	Sycamore (Acer pseudoplatanus)	7	180	3.0	2.0	3.0	4.0	1	Early mature	50+ Years	Good	Now a single stemmed tree, as one of the twin leaders has been felled to ground level, with whippy regrowth present. Vertical with a well-balanced crown and no major visible defects. Evidence of pruning over the car park.	C1	2.2	15
T23	Ash (Fraxinus excelsior)	8	250	3.5	3.5	3.5	3.5	1	Early mature	20+ Years	Good	Single stemmed and vertical with a well-balanced crown. No major visible defects.	C1	3.0	28
T24	Sycamore (Acer pseudoplatanus)	11	440	0.0	4.0	6.0	4.0	1	Early mature	50+ Years	Good	Bifurcated at 1.6m with slightly included union. Bark cracking and lifting on lower main stem. Epicormic growth at base. Lower branches have been previously reduced to provide clearance over the car park, leaving stubs.	C1	5.3	88
T25	Sycamore (Acer pseudoplatanus)	10	297	2.0	1.0	4.0	4.0	2	Early mature	50+ Years	Good	Bifurcated at 1m and vertical. Evidence of pruning on south side of lower canopy over the car park, with stubs left.	C1	3.6	41
T26	Sycamore (Acer pseudoplatanus)	10	210	0.0	1.0	4.0	2.0	1	Early mature	20+ Years	Good	Single stemmed and vertical. Suppressed by adjacent ash tree. South side of lower canopy has been pruned back leaving stubs. Bark wounds noted on lower main stem with some wound occlusion.	C1	2.5	20
T27	Ash (Fraxinus excelsior)	11	329	2.0	4.0	5.0	4.0	3	Early mature	20+ Years	Good	Trifurcated from 1m. Pruned back on south side over carpark with stubs.	C1	3.9	48

Ref	Species	Ht (m)	Stem dia (mm)	Canopy spread (m)				CC	Life stage	RULE	Cond.	Notes (Including preliminary management recommendations)	BS Cat.	RPA (m)	RPA (m ²)
				N	E	S	W								
T28	Goat Willow (<i>Salix caprea</i>)	11	325	7	7	7	7	0	Early mature	40+ Years	Good	An early mature to mature goat willow, which appeared to be multi-stemmed from ground level. Limited detailed inspection due to lack of access. Tree not inspected fully. Observations taken from car park area. Tree situated high up on the retaining wall.	C1	3.9	47
G01	Mixed species: (see notes for details)	8#	100	See plan for extents				1+	Early mature	50+ Years	Good	Boundary group of trees. Species include silver birch, common alder, and sycamore. Mainly single-stemmed. No major visible defects.	C1,2	See plan for extents	
G02	Mixed species: (see notes for details)	18#	300	See plan for extents				1+	Early mature	50+ Years	Good	A group comprising of mature hybrid black poplars with an understorey of hawthorn, hazel, forsythia, holly, young self-set sycamore and English elm. Vegetation is growing on an embankment which slopes upwards towards the northern boundary.	B1,2	See plan for extents	
G03	Mixed species: (see notes for details)	6#	150	See plan for extents				1+	Early mature	50+ Years	Good	A group of multi-stemmed hawthorn grown on a steep embankment. No major visible defects.	C1,2	See plan for extents	
G04	Mixed species: (see notes for details)	10#	250	See plan for extents				1+	Early mature	50+ Years	Good	A group of sycamore and Ash growing on a steep embankment which slopes upward towards the northern boundary.	B1,2	See plan for extents	

8.0 Appendix 3 – Site photographs



Plate 1: G001 Silver Birch on Western boundary of the site.



Plate 2: G002 on Northern boundary of the site.

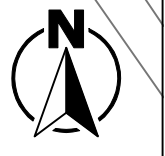
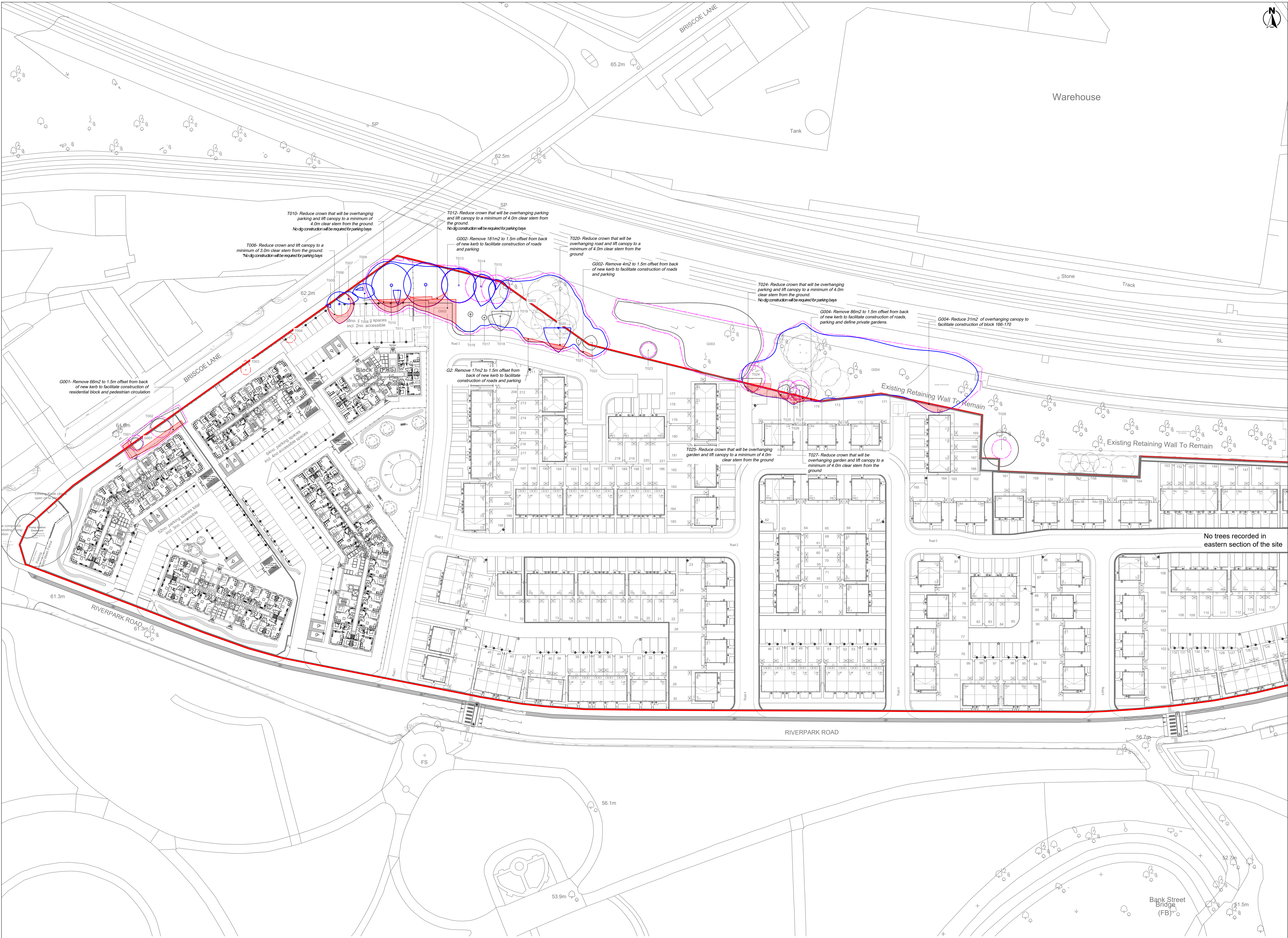


Plate 3: G003 on Northern boundary of the site.



Plate 4: G004 on steeply sloping Northern boundary of the site.

9.0 Appendix 4 – Tree Impacts Plan



- NOTES**
- Do not scale from this drawing for construction purposes
 - This drawing is to be read in conjunction with all relevant drawings and documents associated with this project.
 - All surveyed information including levels and layout is provided by others
 - All existing and proposed dimensions, levels and locations to be checked and verified by the main contractor on site prior to the commencement of the works and any anomalies reported to the engineer.

KEY - Tree Impacts Plan

Tree Categories BS 5837 (2012)

- Tree Category A
- Tree Category B
- Tree Category C
- Tree Category U
- Root Protection Area (RPA)
- Tree to be removed
- Partial removal of tree group

No trees recorded in eastern section of the site

PL03	03/04/25	Revised to site layout Rev. P	VM	VM	VM
PL02	27/02/25	For Planning	GB	VM	VM
PL01	28/03/24	For Planning	HI	VM	VM
Rev	Date	Description	DRA	CHK	APP

Project
Riverpark Road, Manchester

Client
Kellen Homes Ltd.

Drawing Title
Tree Impacts Plan

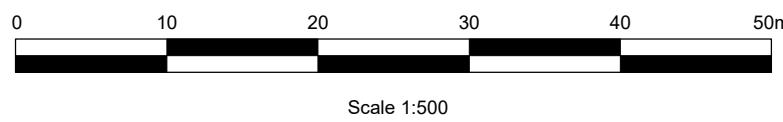
Status	Date	Scale	
For Planning	29/03/24	1:500 @ A0	
Drawn	Designed	Checked	Approved
GB	--	VM	VM
DWG No.			Revision
920.001.ENZ.XX.00.DR.AR.45.102			PL03



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10.0 Appendix 5 – Methodology

10.1 Introduction

10.1.1 This report and the methodology adopted to carry out the Arboricultural Survey is based on recommendations outlined in *British Standard (BS) 5837:2012 Trees in relation to design, demolition and construction- Recommendations*. This was published by BSI Standards Limited and came into effect on 30th April 2012. It supersedes BS 5837:2005 which is withdrawn.

10.2 Arboricultural Survey

10.2.1 A tree survey or arboricultural survey is a ground-based visual assessment of existing trees and tree groups on a site. It records the location of trees, the species, the estimated height and canopy spread, the stem diameter, and the tree's life stage, remaining useful life expectancy (RULE) and overall condition. Any distinctive features and abnormalities such as structural defects and physiological condition which may or may not have an adverse effect on the health or stability of the tree are also recorded, together with any signs of nesting birds and bat roost potential. Where ground conditions may influence the tree's growth, health and stability, such as water logging, ground compaction and severe level changes, this would also be recorded.

10.2.2 The site walkover includes an assessment of the overall value and quality of the trees on site by assigning a retention category to each tree and tree group. This assists stakeholders in deciding which trees should be removed or retained in the event of development occurring. There are four categories: A (high quality), B (moderate quality), C (low quality) and U (unsuitable for retention). For trees in categories A to C, these should qualify under one or more subcategories: 1 (mainly arboricultural qualities), 2 (mainly landscape qualities) and 3 (mainly cultural values).

10.2.3 The findings of the tree survey are recorded in an Arboricultural Survey Schedule supported by a Tree Survey and Tree Constraints Plan, both appended to the report.

10.2.4 The survey includes all trees which have a stem diameter of at least 75mm at 1.5m height or measured in accordance with BS 5837:2012 Annex C.

10.2.5 The tree survey usually records individual trees (labelled "T" on the Tree Survey and Tree Constraints Plan and in the Tree Survey Schedule), but may also group trees of similar age, species and condition into Groups (labelled "G"). Trees may also be grouped where they form a homogeneous unit (e.g. tree belts and woodland groups) which is unlikely to be directly

affected by the development (labelled “G” for small groups or “W” for Woodland Groups, as appropriate). Hedgerows are also recorded where present (labelled “H”).

10.2.6 To determine the location of trees, groups and hedgerows on site, Enzygo Ltd. and any surveyor sub-consultants use a handheld GPS tracking device with an accuracy of up to 1-2m. It enables the surveyor to plot trees onto a base plan, usually a digital copy of a topographic survey or an OS map tile, and to simultaneously record all tree survey information required for a full tree survey schedule to BS 5837:2012.

10.2.7 Following the completion of the site survey this is then uploaded into a Computer Aided Design (CAD) programme in order to produce the Tree Survey and Tree Constraints Plan, with the tree survey information converted into a corresponding Tree Survey Schedule.

10.2.8 The survey includes any trees outside the site boundary which may be affected by any development proposals by overhanging canopies or by Root Protection Areas which are likely to extend into the site. These trees are normally found within 15m from the site boundary.

10.2.9 In addition to a site walk-over survey, a desk-study is carried out which includes the calculation of Root Protection Areas (RPA) in accordance with BS 5837:2012 clause 4.6 as the minimum area of land around the stem of a tree which should be protected during construction.

10.2.10 The desk study includes liaison with the relevant local authority to establish whether any of the trees on site are protected by Tree Preservation Order (TPO) or whether Conservation Areas affect the legal status of any trees. Some local authorities provide online mapping tools on their website which identify any legal tree protection.

10.3 **Arboricultural Impact Assessment (AIA)**

10.3.1 Once the Tree Survey and Tree Constraints Plan has been prepared and a site layout is available, these are superimposed to establish the potential impact of the development, including the construction phase, on the existing tree stock.

10.3.2 The requirement for tree removal is ascertained where tree stems are located within or very close to proposed building footprints and hard landscape and/or within areas with significant proposed level changes and other works requiring soil movement (incl. excavations).

10.3.3 In a second stage an assessment is carried out of the impact both the construction operations and the development proposals may have of retained trees, including hard landscape in RPA, vertical structures and tree canopies

10.3.4 Using information provided by the client on construction operations, including site access, construction vehicle and plant movement and location of the site compound and material

storage areas, the potential impact on both below and above ground parts of retained trees is assessed.

- 10.3.5 In addition to assessing the impact of the development on existing trees, Enzygo also include an assessment of the impact of existing trees on the future use of the site, including shading, spatial constraints and the use of gardens, open spaces, paths and roads. Potential conflicts between trees and the safety of the site have also been analysed.



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