THE ENVIRONMENT PARTNERSHIP

B&Q GREAT STONE ROAD

STRETFORD

ARBORICULTURAL IMPACT ASSESSMENT

MARCH 2020

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1.0	20/02/18	TDR	JGS	Issue	Superseded
2.0	11/02/20	HEE	JGS	Updated proposals, tree removals and red line boundary	Superseded
3.0	10/03/20	HEE	RMG	Updated with client comments and indicative planting scheme	Final

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Executive Summary

1. TEP has been commissioned to conduct an arboricultural survey the former B&Q site on Great Stone Road in Stretford, Manchester. Trees present include those planted along Great Stone Road, a belt of trees between the car park and a Metrolink track to the east, and a small number of self-seeded individuals internal to the site.

2. Based on an objective assessment made in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, there are 8 Category B, 8 Category C, and 7 Category U trees and groups on or within influencing distance of the site. 1 hedge was also recorded but not assigned a quality category.

3. A site survey and desktop searches identified no trees subject to Tree Preservation Order; no trees within a Conservation Area; no veteran trees and no ancient woodland. The capacity of trees to support roosting bats should be confirmed by an ecologist prior to works, although during a preliminary ground based assessment, no arboricultural features that may be suitable for bats were observed.

4. 26 trees (recorded as 14 individuals and 3 tree groups) and approximately 17.5 linear metres of hedgerow would be removed to facilitate the development proposals. Of these however, 8 are in poor condition and would be recommended for removal irrespective of development to remove the risk of future failure onto high value targets. It will be possible to retain all other trees throughout the construction in accordance with BS5837:2012.

5. 1 tree to be removed appears to be growing on the application boundary. The exact ownership of this tree is uncertain and it may be necessary to demonstrate control of the tree to the Local Planning Authority prior to its removal.

6. Supervised excavation of the grass bank within the rooting area of tree T4 will be required. Temporary protective fencing will also be required to demarcate a Construction Exclusion Zone around retained trees prior to commencement. The alignment of the fencing is seen on Drawing 2 and a recommended fencing specification is shown on Drawing 3. This will restrict site movements, which should be considered early in the construction process.

7. Indicative planting schemes for the roof terraces and ground floor level are to be submitted with the application. These show indicative planting locations that may be suitable for trees. At ground level the locations of 6 small ornamental trees within the grass verge and 82 closely spaced topiary boxhead hornbeam trees within the courtyard areas are shown. The rooftop terraces show potential planting locations of 23 heavy standard trees. Indicative yew hedgerow locations are also shown at ground floor level.

8. This report constitutes a valid basis for the evaluation of impacts on trees resulting from the proposed development for a period not exceeding 2 years. After this, it may be necessary to review survey data and conclusions to ensure reliability. Where the recommendations of this report have been followed, any future deterioration in tree condition may not be attributed to the development.

1.0 Introduction

1.1 TEP has been commissioned by Accrue (Forum) LLP to conduct an arboricultural survey of land at B&Q Great Stone Road. This report details the arboricultural impact of developing the site, subsequent mitigation recommendations and protective measures.

1.2 The survey was carried out in December 2017 by means of inspection from ground level by a qualified Arboricultural Consultant. Trees were assessed in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

1.3 Under the British Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.

1.4 A topographical survey was used to record the position of trees and vegetation (drawing reference: 120717CP-01). Where the age distribution and species mix of tree cover was relatively uniform, trees were plotted as groups. For the purposes of this report it is assumed that the detail on the drawing is accurate. A number of trees were not shown on the topographical surveys and their locations are estimated[1].

1.5 The nature of the soils on site was not assessed during the survey. The possibility of minor soil movement due to tree root activity cannot be discounted. Prior to the undertaking of foundation depth calculations any estimated tree locations should be resolved. Any apparent discrepancy in tree location or queries relating to the location of species within groups should be discussed with TEP prior to submission.

1.6 A total of 19 individual trees (T1-T19); 4 groups of trees (G1-G4); and 1 hedge (H1) were surveyed and mapped[2]. All arboricultural information recorded during the survey is presented at Appendix A.

1.7 This report provides the results of the survey and includes the following:

- A schedule of all trees located on, or within influencing distance of the proposed development site (Appendix A);
- An assessment based on BS 5837:2012, of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: A, B, C or U (Appendices A & B);
- An assessment, based on BS 5837:2012, of the requirement for protection of trees during the construction phase (Section 6);
- Advice on removal, retention and management of trees (Sections 5 & 7);
- A Tree Constraints Plan detailing tree quality categories, canopy spreads and Root Protection Areas (RPA) for all trees surveyed (Drawing 1); and
- A Tree Removal and Protection Plan detailing the development proposals alongside trees to be retained and removed; temporary tree protection measures and an area requiring supervised excavation (Drawing 2).

[1] Estimated feature locations are marked on Drawing 1
[2] See Drawing 1: Tree Constraints Plan

2.0 The Site and Surroundings

2.1 This site is located on Great Stone Road in Stretford, Manchester. It is 3.8 miles southwest of Manchester City Centre and surrounded by Old Trafford cricket ground, residential housing and multi-storey office blocks. The existing site comprises a large industrial commercial property and associated car parking.

2.2 The site is largely devoid of trees with the exception of the south-eastern boundary. Trees are present in the pavement of Great Stone Road running parallel to the sites southern boundary.

Figure 1 Site location and approximate boundary (OS Street View ® 1:10 000 scale)

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2.3 The survey area descends down a grass bank from Great Stone Road for approximately 10m before levelling out and remaining flat across the rest of the site.

2.4 At the time of the survey, the site was surrounded by a security fence and closed to the public.

2.5 Weather conditions during the survey were icy but clear.

2.6 Inspection of trees was restricted in some cases by restricted access. These trees were surveyed insofar as was possible from accessible areas of the site and from the public highway[3].

Development Proposals

2.7 The proposed development includes a building between 4 and 9 storeys in height, with commercial space at ground floor level, and 333 apartments. The building will also include further ancillary spaces, bicycle storage, and an associated plant room and substation.

2.8 Detail of the proposals is shown on Drawing 2 and is based on the proposed Site Plan supplied by O'Connell East Architects.

[3] Survey restrictions are noted in Appendix A

3.0 Statutory Protection and Guidance

National Planning Policy Framework (NPPF)

3.1 The NPPF assumes protection of all ancient woodland and veteran trees unless it can be clearly demonstrated that the need for, or benefits of, development outweigh the loss. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree of exceptional value for wildlife, in the landscape, or culturally because of its great age, size or condition.

3.2 On this site there are no ancient woodland or veteran trees.

Tree Preservation Orders & Conservation Area Designations

3.3 Where it is considered expedient to do so, local authorities can create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in force, lopping, topping, felling, uprooting or wilful damage caused to a tree is prohibited and such actions may be prosecuted and incur an unlimited fine. Works to TPO protected trees must only be undertaken with the written consent of the local authority.

3.4 Section 211 of The Town and Country Planning Act 1990 (TCPA) relates to the preservation of trees in Conservation Areas. Under Section 211 anyone proposing to remove, uproot or destroy any tree within a Conservation Area is required to give the local planning authority six weeks' prior notice (a "section 211 notice"). During this period the Council may consider serving a Tree Preservation Order to prevent the proposed work from being undertaken.

3.5 Exceptions from the requirement to give a Section 211 notice are set out in The Town and Country Planning (Tree Preservation) (England) Regulations 2012. A person does not have to give the local planning authority six weeks' prior notice for, amongst other reasons, work to trees so far as such work is necessary to implement a planning permission (other than an outline planning permission).

3.6 A check was undertaken with Trafford Council on 11th February 2020. A member of the planning team confirmed that no trees on or immediately adjacent to the site were subject to Tree Preservation Orders or within a Conservation Area.

Protected Species – Bats

3.7 Mature trees often contain cavities, crevices and hollows, which are a potential habitat for roosting bats. Bats are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010, and as such causing damage to a bat roost constitutes an offence.

3.8 A preliminary ground level appraisal of the wildlife habitat value of each tree was undertaken by a trained layperson as part of the arboricultural survey. Where observations incidental to the primary purpose of tree surveying have a possible interest to bats they recorded below. This information should not be treated as comprehensive bat survey. However, an arboricultural view on the likely internal structure of any cavity or crevice may usefully inform a ground based bat habitat assessment. The extent of any bat roost potential in trees should be determined by the project ecologist.

3.9 If the presence of a bat roost is suspected whilst undertaking works on any trees on site, operations must be halted until a licensed bat handler or ecologist can provide advice.

Protected Species - Birds

3.10 Trees are a potential habitat for nesting birds, which (as well as their nests and eggs) are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly, damage or destroy an active nest or any part thereof.

3.11 Due to the suitability of the trees within the survey boundary for nesting birds, all tree work should ideally be undertaken outside the bird nesting season (March to August, inclusive).

3.12 If this is not possible then a detailed inspection of each tree should be undertaken by a qualified ecologist immediately prior to the arboricultural works. Should an active nest be found (being built, containing eggs or chicks), any work likely to affect the nest must be halted until the nest becomes inactive.

4.0 Tree Population

4.1 19 individual trees (T1-T19); 4 groups of trees (G1-G4) and 1 hedge (H1) were recorded within influencing distance of the site. A schedule of all trees and groups in terms of species, condition, age, management recommendations and BS 5837:2012 quality categories is provided at Appendix A.

4.2 Surveyed trees are primarily outside the site boundary with the exception of those on the south-eastern boundary and the occasional young self-seeded tree. Those outside the boundary include individual trees planted along Great Stone Road and a belt of trees between the site and the adjacent Metrolink line to the east.

Figure 2 Trees along Great Stone Road (trees T1-T5) and trees at the southeast boundary

4.3 Notable trees within the site comprise planted individuals on the south east boundary at the edge of the existing car park hard surfacing. These trees (trees T6-T19 and groups G2-G3) were likely planted as part of the area's original landscaping and are made up of a range of species. Tree condition varies but the group contains several trees that have been subject to mechanical damage which has instigated overall deterioration (T10, T11, T12, T16, T17). Trees T9, T13 and T15 however are in reasonable condition with good form.

Figure 3 View along north-eastern boundary with tree T6 in the foreground and G1 beyond the fence

4.4 Outside the south-eastern boundary is a large group of self-seeded trees growing in a belt adjacent to the nearby Metrolink tram line (group G1). Access was limited during the survey however trees appeared to be in general good health and vigour with the occasional exception typical of congested tree groups. As a landscape feature these trees provide a good functional screen for the site while softening the areas aesthetics.

4.5 On Great Stone Road, outside the site boundary stand a number of street trees comprising common lime and Norway maple (trees T1-T5). These trees are presumed to be council owned and have a history of management and pruning. Given the proximity of the site's internal grass banking it is likely that tree roots have migrated into the area, taking advantage of the desirable growing medium.

Figure 3 View along grass bank adjacent Great Stone Road where trees T1-T5 are located

4.6 A small number of self-seeded trees have grown up within the site and although vigorous, provide little arboricultural value (tree T19 and group G4).

4.7 A single Leyland cypress hedge (hedge H1) runs along a small section of the north-western boundary.

4.8 Tree and group locations, their quality categories and canopy spreads are shown on Drawing 1.

Tree Quality Categorisation

4.9 Under BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, trees and groups are objectively assigned a quality category to quantify their value within any future development. The table below contains a summary of the categories presented in the British Standard. The full table has been reproduced at Appendix B.

Table 1 Summary of BS 5837 tree quality categorisation criteria

Category A	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value
Category B	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value
Category C	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
Category U	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infectious pathogens that threaten other trees

5.0 Impacts of the Proposed Development

5.1 This section describes the number and quality of trees that would be removed in order to facilitate the development proposals, and those that can be retained. This is the result of an assessment based on the proposed site plan.

5.2 Hedgerows have not been afforded a quality value as they do not fall within the scope of BS 5837:2012.

Table 2 Arboricultural impacts by quality category[4]

	Category A	Category B	Category C	Category U	Hedge
Features that would be retained	-	T1, T2, T3, T5 G1	T4	-	-
Total	**-**	**4 trees** **1 group**	**1 tree** **0 groups**	**-**	**-**
Features that would be removed	-	T9, T13, T15	T6, T7, T8, T14 G2 (4),G3 (3), G4 (5)	T10, T11, T12, T16, T17, T18, T19	H1
Total	**-**	**3 trees** **0 groups**	**4 trees** **3 groups**	**7 trees** **0 groups**	**1 hedge**

Numbers in brackets adjacent to groups indicate the number of trees to be removed

5.3 26 trees (recorded as 14 individuals and 3 tree groups) and approximately 17.5 linear metres of hedgerow would be removed to facilitate the development proposals. Of these however, 8 are in poor condition and would be recommended for removal irrespective of development to avoid the risk of future failure.

5.4 1 tree within group G3 appears to be growing on the application boundary. The exact ownership of this tree is uncertain and it may be necessary to demonstrate control to the Local Planning Authority prior to removal. This is a young to middle age, self-set common ash tree in fair condition and could be replaced in the short term by replacement planting.

5.5 The greatest arboricultural loss on the site is the removal of 3 moderate quality (Category B) trees. These are in fair to good condition, with T13 and T15 comprising middle age common lime and T9 being a mature wild cherry. It would be possible to mitigate for the loss of these trees in the medium term with replacement tree planting of similar species.

[4] See Appendix 1, Arboricultural Survey Data for sub-categories

5.6 The majority of trees that would be removed within the site are low quality self-seeded individuals or those that are unsuitable for retention due to impaired condition. The arboricultural impact of the proposals would consequently be low and could be directly mitigated though replacement tree planting.

5.7 Tree T4 is an offsite street tree located within the pavement adjacent to a steep grass bank within site. The grass bank likely provides a suitable growing area for roots of the adjacent street trees, although some root growth may have been impeded by the footings of the wall between the site and pavement. In order to ensure minimal root damage during construction of a footpath and stairs within the grass bank, supervised excavation will be required to monitor and take suitable action if any roots are found. The recommended method is described in Section 7.0 of this report.

5.8 Temporary fencing to protect the retained trees will also be necessary. This will reduce the useable area for works and storage of materials during development.

5.9 Where planning permission is granted, the retention schedule shown above and on Drawing 2 would normally form a part of that permission. Any change to this schedule may therefore require an application to vary the consent.

6.0 Tree Protection Requirements

6.1 The following information sets out the primary considerations in determining the requirement for tree protective measures and in the assessment of development impact.

Root Protection Areas

6.2 As per BS 5837:2012, the Root Protection Area (RPA) is calculated using each tree's diameter at 1.5 metres[5] and represents the minimum area around each tree that must be left undisturbed to ensure its survival.

6.3 Tree roots typically spread two times the width of the crown, although this figure may be significantly increased for certain species and where specific ground conditions are present. The majority of tree roots are found in the top 600mm of soil and most of the fine roots that absorb water and nutrients are found close to the surface.

6.4 The morphology of roots is influenced by past and present site conditions (including roads, buried structures and underground services), soil type, topography and drainage. This means that a tree's roots may not be uniform in extent and the RPA may not be a circular area centred on the tree stem.

6.5 On this site, likely influences on root distribution include the hard surfacing internal to the site and Great Stone Road. Roots are unlikely to be absent in all these areas but where unfavourable conditions exist, growth will certainly be impeded. Where uncompacted soil on the banking adjacent to Great Stone Road offers a better rooting medium than the hard surface of the road and paths, it is expected that the roots from trees T1 to T5 will have colonised this area and be biased in that direction, although the footings of the wall between site and the pavement may have impeded some root growth.

6.6 The RPA has been adjusted or offset where appropriate to most accurately represent the likely spread of roots for each individual tree[6].

Ground Contamination

6.7 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any tree due to the risk of soil contamination caused by accidental spillage.

6.8 Particular care must be taken when working on or close to sloping ground to avoid unintentional runoff into the rooting area of retained trees.

Underground Utility Issues

6.9 No utility drawings were provided and no assessment has been made of the juxtaposition of tree roots and the likely location of new services. It has been presumed for the purposes of this report that all utilities will be installed outside of the Construction Exclusion Zone shown on Drawing 2.

[5] Refer to Appendix A for RPA area calculations
[6] See Drawing 1 for RPA shapes

6.10 Where the installation of services within the Construction Exclusion Zone of retained trees is unavoidable, appropriate work methods will be required to ensure the safe long-term survival of those trees. This process will require additional consultation with a qualified Arboricultural Consultant and is likely to be more expensive than conventional trench installation.

Ground Level Changes

6.11 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor changes (up to 100mm) can be tolerated in some cases but is heavily dependent on tree species, condition and growing environment.

6.12 Existing ground levels within the Construction Exclusion Zone should be maintained. The advice of a qualified Arboricultural Consultant should be sought if level changes are required.

Drainage & Storm Water Run-off Issues

6.13 Drainage and storm water run-off requires due consideration to prevent excessive and/or polluted run-off into the rooting area of trees to be retained.

6.14 The maintenance of existing water bodies and hydrology patterns will also be required where this relationship is important to tree health.

7.0 Recommendations

Tree Work

7.1 All tree removal relates to development and construction and there are therefore no recommended tree surgery works other than this.

Protective Fencing and Exclusion Zones

7.2 Site-wide tree protection measures will be required during construction to deliver the tree retention schedule presented in this report. This will include temporary protective barrier fencing to demarcate a Construction Exclusion Zone (CEZ) around retained trees. This must be put in place prior to the commencement of any development works, including bringing machinery or materials onto site, the erection of site huts or demolition.

7.3 The CEZ should protect both tree roots and branches and should be designed to incorporate canopy spread where appropriate. All of the CEZ should be protected throughout the construction process by either an approved working methodology, ground protection, or protective fencing.

7.4 Protective fencing alignment is shown on Drawing 2 and assumes that all trees identified for removal have been felled prior to installation.

7.5 The fencing must be fixed into the ground to withstand accidental impact from machinery and to ensure that a sufficient protective area is maintained. Details of the recommended protective fencing are shown on Drawing 3.

7.6 A weatherproof notice identifying the Construction Exclusion Zone must should be fixed to each fencing panel. An example notice is shown on Drawing 3.

7.7 Any alteration to the fencing alignment to allow for approved activities should only be made in agreement with the council's Arboricultural Officer.

7.8 The protective fencing must not be removed until the physical construction phase has been completed and all vehicles have been removed from site, to the satisfaction of the council's Arboricultural Officer.

Supervised Excavation of Grass Bank

7.9 Excavation of the grass bank would be required adjacent to offsite tree T4 within the RPA. This will require supervision by a qualified arboricultural consultant to make an assessment on underlying root disturbance and any subsequent management recommendations.

7.10 The Site Manager should appoint an arboricultural consultant prior to any works taking place within the area identified on Drawing 2.

7.11 Excavation within the RPA should be carried out manually using hand tools only.

Mitigation for the removal of trees

7.12 The National Planning Policy Framework (NPPF) is a material consideration in the planning process and promotes a presumption in favour of sustainable development. In terms of the natural environment, development should minimise impacts on biodiversity and provide a net gain in biodiversity where possible.

7.13 In respect of trees, a sustainable development will be one whereby the total number, value or function provided by trees is maintained or increased or where the long-term prospects of the existing tree stock can be substantially improved. Net gains in biodiversity may be demonstrated where the number of tree species, variety of tree ages or range of niche habitats can be increased. Native, old, large or dead trees are likely to have a relatively significant impact on a scheme's environmental credentials, as will the connectivity of trees, hedges and woodland.

7.14 26 trees would be removed as part of the development proposals. Mitigation for the loss of amenity and associated habitat may be required in the form of replacement tree planting. Space for new tree planting within the site is limited, however along the grass bank there is potential to plant several small to medium sized trees. These would be best placed between trees on Great Stone Road to prevent long term canopy conflict. As a minimum, mitigation replanting should also include at least 3 extra-heavy standard trees within the site in addition to replacement planting on the grass bank.

7.15 Trees replanted internally within the site should consider ultimate size and available rooting volume. Suitable species for this may include silver birch *(Betula pendula)*, wild cherry *(Prunus avium)*, common whitebeam *(Sorbus aria)* and field maple *(Acer campestre)*.

7.16 Indicative planting schemes for the roof terraces and ground floor level are to be submitted with the application (ref: 2929_102_C and 2929_105_A). These show indicative planting locations that may be suitable for trees. At ground level the locations of 6 small ornamental trees within the grass verge and 82 closely spaced topiary boxhead hornbeam trees within the courtyard areas are shown. The rooftop terraces show potential planting locations of 23 heavy standard trees. Indicative yew hedgerow locations are also shown at ground floor level.

7.17 Aftercare is vital to the survival of newly planted trees. Provision should be made for a minimum of two years' maintenance of newly planted trees and include watering, formative pruning and the checking of tree ties and stakes.

7.18 The extent of mitigation planting will ultimately be determined in agreement with the LPA.

Post Construction Tree Care

7.19 Hazard recommendations are based on observations at the time of survey. Trees are dynamic living organisms whose structure is constantly changing. Even those in good condition can suffer from damage or stress. Following site development, regular (annual or biennial) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.

APPENDIX A: Arboricultural Survey Data

APPENDIX A: Arboricultural Survey Data Sheets

Surveyor Thomas Robinson
Date 21.12.17
Town Trafford
Site Great Stone Road
Dwg Ref D6370.01.001

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
Trees																			
T1	Common ash	9.0	370	1.0	3.5	3.0	3.0	3.5	4.0	W	Middle Age	Good	Roadside tree within hard surfacing adjacent to Great Stone Road; Previous history of crown lifting; small recent flush cuts; stubs and minor dead wood	B,2	4.4	61.9		Long	N
T2	Common ash	9.0	380	1.0	3.5	3.5	3.5	3.5	5.0	NW	Middle Age	Good	Roadside tree within hard surfacing adjacent to Great Stone Road; Previous history of crown lifting; good form; roots raising adjacent ground; bifurcation at 3m	B,1,2	4.6	65.3		Long	N
T3	Common ash	10.0	550	1.0	5.0	5.0	5.0	3.5	3.5	E	Middle Age	Good	Roadside tree within hard surfacing adjacent to Great Stone Road; Previous history of crown lifting; larger than neighbouring trees suggesting access to good rooting zone; flush cut internal to the canopy appears to be healing well	B,1,2	6.6	136.8		Medium	N
T4	Common lime	8.0	350	1.0	3.0	3.0	3.0	3.0	4.0	NW	Mature	Fair	Roadside tree within hard surfacing adjacent to Great Stone Road; Previous history of crown lifting; trifurcation at 2m with tight inclusions; balanced crown	C,1,2	4.2	55.4		Medium	N
T5	Common ash	8.0	370	1.0	3.0	3.0	3.5	2.5	3.0	NW	Middle Age	Good	Roadside tree within hard surfacing adjacent to Great Stone Road; Previous history of crown lifting; roots lifting adjacent surface	B,2	4.4	61.9		Medium	N
T6	Wild cherry	10.0	389	5.0	4.0	3.0	2.0	5.0	0.0		Middle Age	Poor	Hollows and cavities throughout, gnarled bark with poor form and inclusion from base, broken branches and standing dead wood, some ecological value	C,3	4.7	68.6		Medium	N
T7	Hawthorn	7.0	213	5.0	4.0	2.0	2.0	3.0	0.0		Middle Age	Poor	Multi-stemmed tree along row, crevices with lots of dead wood, broad crown	C,3	2.6	20.6		Short	N
T8	Common ash	7.0	100	1.0	3.0	0.0	0.0	0.0	0.0		Young	Fair	Young tree, self seeded within and occluding metal fence	C,3	1.2	4.5		Medium	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T9	Wild cherry	10.0	380	1.0	4.0	3.0	2.0	3.0	3.0	W	Mature	Fair	Stubs and broken branches, crown congested with T10, dog-leg morphology in places, broad form, prominent among neighbouring trees with moderate dead wood	B,1	4.6	65.3		Medium	N
T10	Common lime	10.0	400	1.0	3.0	2.0	2.0	2.0	0.0		Middle Age	Poor	Extensive basal sprouting and fused limbs, crossing branches, significant dead wood, poor form suppressed by T9	U	0.0	0.0	Remove tree	Medium	N
T11	Wild cherry	6.0	200	1.0	2.5	1.0	1.0	2.5	2.0	NW	Middle Age	Poor	Extensive dead wood, large basal cavities with previous failures evident	U	0.0	0.0	Remove tree	Short	N
T12	Hawthorn	6.0	179	2.0	1.0	2.0	2.0	1.0	0.0		Middle Age	Poor	Dead wood, poor form, congested crown	U	0.0	0.0	Remove tree	Medium	N
T13	Common lime	12.0	550	1.0	4.5	3.0	2.5	3.5	2.0	NW	Middle Age	Fair	Moderate basal sprouting, minor internal crown sprouting all typical of species, good form, prominent tree	B,1,2	6.6	136.8		Medium	N
T14	Wild cherry	10.0	310	1.0	3.0	2.0	2.5	3.0	3.0	SW	Middle Age	Fair	Large limb with questionable attachment to southeast of stem, broad form, moderate dead wood and stubs	C,1,3	3.7	43.5		Medium	N
T15	Common lime	12.0	490	1.0	3.5	3.0	2.5	3.5	0.0		Middle Age	Good	Tall prominent tree with basal sprouts, clear stem with minor dead wood and stubs	B,1	5.9	108.6		Medium	N
T16	Wild cherry	9.0	400	1.0	4.0	2.5	2.5	2.0	1.0	NE	Middle Age	Fair	Significant dead wood and previous failure	U	0.0	0.0	Remove tree	Medium	N
T17	Wild cherry	8.0	372	2.0	2.0	3.0	2.0	2.0	0.0		Middle Age	Poor	Poor form between two fences, failures and moderate dead wood	U	0.0	0.0	Remove tree	Short	N
T18	Crack willow	7.0	400	1.0	4.0	1.0	1.0	4.0	0.0		Middle Age	Poor	Failed tree at 1.5m	U	0.0	0.0	Remove failed tree	Short	N
T19	Elderberry	4.0	75	5.0	1.0	1.0	1.0	1.0	0.0		Middle Age	Poor	Occluding fence	U	0.0	0.0		Short	N
Groups																			
G1	Wild cherry, silver birch, elderberry, common ash	to 12	75 - 400	c. 60							Young to Middle Age	Fair	Adjacent to railway outside the boundary fence, not accessible, litter and fly tipping evident throughout, plentiful regeneration with occasional trees in a range of conditions	B,2	Refer to Drawing	n/a		Medium	N
G2	Common ash, common holly, wild cherry, hawthorn	to 8	80-200	4.0							Middle Age	Fair	Indistinct, self-seeded trees with single wild cherry on site side of fence with large wound on stem, some minor screening value, congested stems, minor to moderate dead wood	C,1,3	Refer to Drawing	n/a	Remove wild cherry	Medium	N
G3	Common ash	to 9	80-200	3.0							Young to Middle Age	Fair	Regenerated self-seeded trees	C,3	Refer to Drawing	n/a		Medium	N
G4	Sycamore, goat willow	5.0	to 75	5.0							Young	Fair	Vigorous regen within locked compound	C,3	Refer to Drawing	n/a		Short	N
Hedges																			
H1	Leyland cypress	2.5	0								Middle Age	Good	At fence adjacent to side track, good screen		Refer to Drawing	n/a		Long	N

APPENDIX B: Survey Method

APPENDIX B: Survey Method

The survey of trees is conducted from ground level only. The nature of the soils on site is not assessed.

Trees are dynamic living organisms with a constantly changing structure; even trees in good condition can suffer from damage or stress. The information recorded is presented as being correct at the time of survey.

The following features of each tree, group of trees or wood may have been recorded in the Arboricultural Survey Data Sheets at Appendix 1.

Species The common name is given. The Latin name may also be given if further clarification is required.

Height Top height of tree recorded in metres.

Stem Diameter For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres.
For multi-stemmed trees an average all stems measured at 1.5m above ground level is used.
For tree groups a range from minimum to maximum diameters is provided based on measurements taken using one of the aforementioned methods.

No. of Stems A count of stems arising below a height of 1.5 metres.

Crown Spread The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.

Height of Lowest Branch
Crown clearance above ground level recorded in metres.

Direction of Lowest Branch
The direction of growth of the first significant branch from the point of attachment.

Maturity

Young	Trees that can reasonably be relocated or replaced like for like, without undue cost;
Middle Age	Trees in the established growth stage of their life with the potential to continue increasing in size;
Mature	Trees that have reached their ultimate size, given their location and surroundings;

Condition **Good, Fair, Poor.** An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account.

Veteran. Trees that are in such a condition as to significantly increase their biological, cultural or aesthetic value. This is characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Comments A brief evaluation and description of the tree with comments on form, vitality, health and any significant defects or symptoms of ill-health.

BS 5837 Tree Quality Assessment
The tree quality assessment is based on Table 1 of BS 5837:2012 (See below). Four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category (the subcategories may be used in combination but do not accumulate collective weight).

Root Protection Area (RPA)
The RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m^2) and as the radius of a circle (m) typically plotted from the centre of the stem.

The RPA is calculated using a mathematical equation included in BS 5837:2012 (Section 4.6 and Table D.1) and is based on a trees stem diameter. In some cases the RPA may need to be adapted to best reflect the likely area and position of roots required to ensure survival; this may be based on criteria such as the tree's condition, species, crown spread and any barriers to growth. Any alteration must be justifiable but is made at the Arboricultural Consultants discretion.

Recommendations
Recommendations for arboricultural works, etc. are based on the **current** land use, and take into account the tree or group attributes without bias to the proposed development.

Estimated Remaining Contribution
An estimation of the life expectancy as healthy functioning tree. This will be influenced by species and the condition of the tree at the time of survey.

Long	> 40 years
Medium	20 – 40 years
Short	less than 20 years

APPENDIX B: Survey Method

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 *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			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

British Standards Institute (2012) *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.* p.9

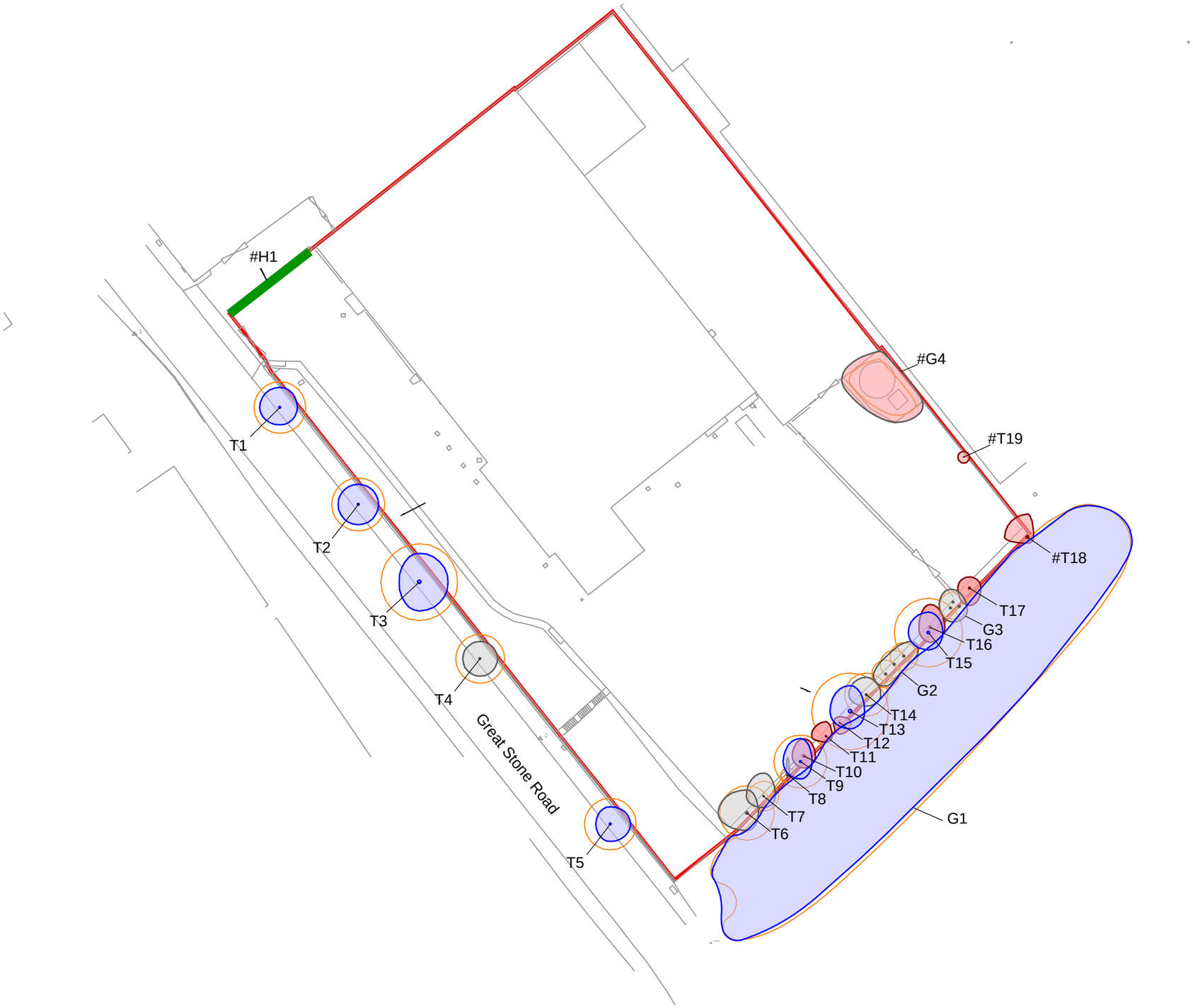
NOTES:

All young trees are assessed as quality category ‘C’ but this does not preclude their retention within a development.

For hedges the height, canopy spread and number of stems is recorded but they are not assigned a quality category.

DRAWINGS

Drawing 1 - Tree Constraints Plan
Drawing 2 - Tree Removal and Protection Plan
Drawing 3 - Recommended Tree Protection Fencing



KEY

[This drawing must be reproduced in colour]

- T1 Individual trees
- G1 Groups of trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- # Approximate location (Feature not shown on topo)

Tree Quality Categorisation

(Based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations)

- Category A (High quality)
- Category B (Moderate quality)
- Category C (Low quality)
- Category U (Unsuitable for retention)
- Hedgerow (Not categorised)

NOTE: This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).

Rev	Description	Drawn	Approved	Date
A	Updated red line boundary	HEE	JGS	10.02.2020

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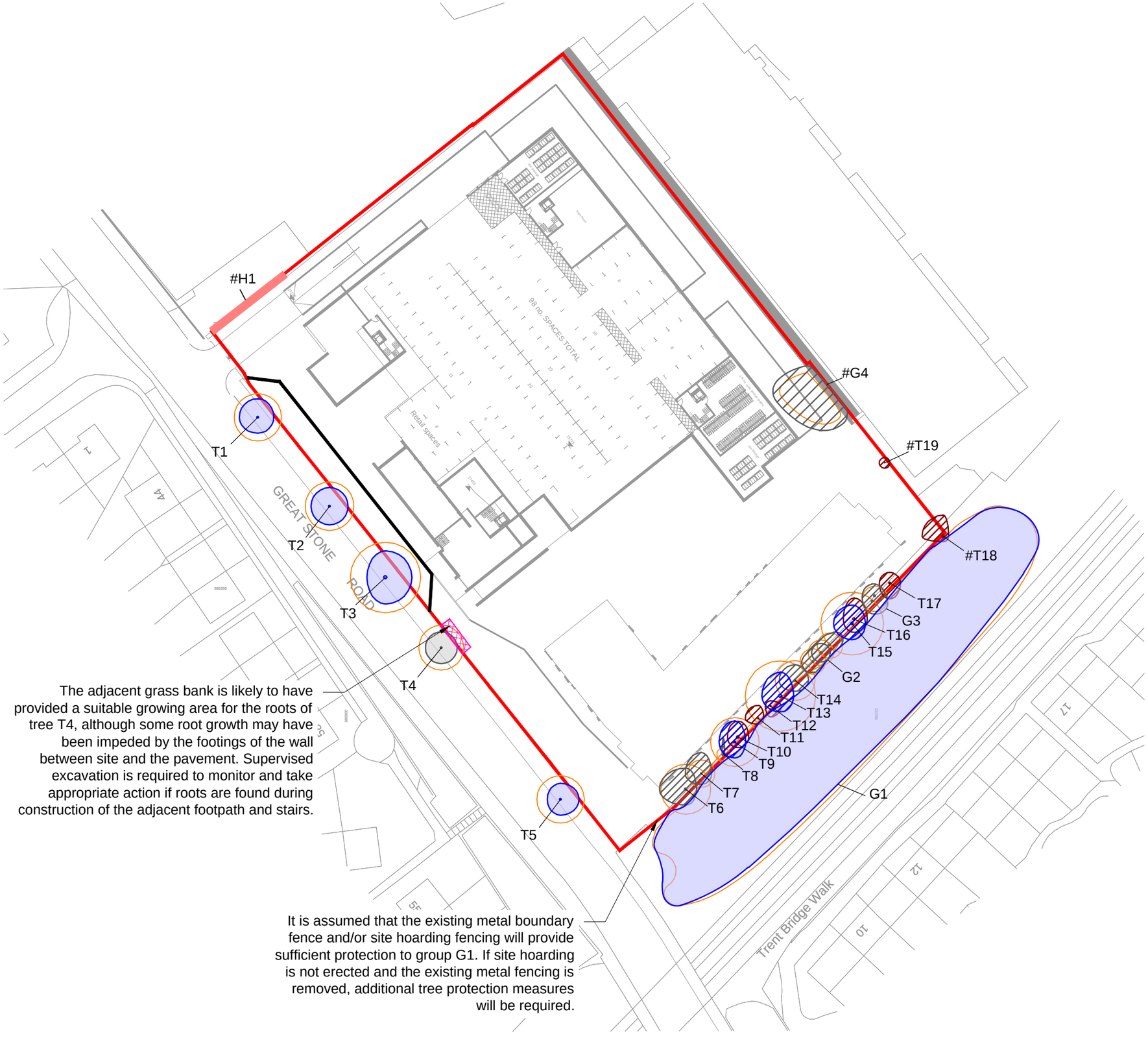
Project
Great Stone Road, Stretford
Arboricultural Impact Assessment

Title
Drawing 1: Tree Constraints Plan

Drawing Number
D6370.01.001

Drawn	Checked	Approved	Scale	Date
TDR	AAB	JGS	1:750@ A3	19/02/2018



The adjacent grass bank is likely to have provided a suitable growing area for the roots of tree T4, although some root growth may have been impeded by the footings of the wall between site and the pavement. Supervised excavation is required to monitor and take appropriate action if roots are found during construction of the adjacent footpath and stairs.

It is assumed that the existing metal boundary fence and/or site hoarding fencing will provide sufficient protection to group G1. If site hoarding is not erected and the existing metal fencing is removed, additional tree protection measures will be required.

KEY

[This drawing must be reproduced in colour]

- T1 — Individual trees
- G1 — Groups of trees
- Survey Boundary
- # — Approximate location (Feature not shown on topo)
- Tree Protection Fencing (c. 70.5m or 21 Heras Panels) (Must be installed prior to works commencement)
- Supervised Excavation — When the build programme has been drafted, the Site Manager will appoint an Arboricultural Consultant to supervise excavation works.

Trees to be retained

- Category B (Moderate quality)
- Category C (Low quality)
- Category U (Trees with existing or potential conservation value)
- H1 Hedgerow (Not categorised)

Trees to be removed

- Category B (Moderate quality)
- Category C (Low quality)
- Category U (Unsuitable for retention)
- Hedgerow (Not categorised)

NOTE: Tree quality assessment based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.

NOTE: This drawing should be read in conjunction with the respective Arboricultural Data Sheets (Appendix A).

Rev	Description	Drawn	Approved	Date
A	Updated proposals, tree removals and red line boundary	HEE	JGS	10.02.2020

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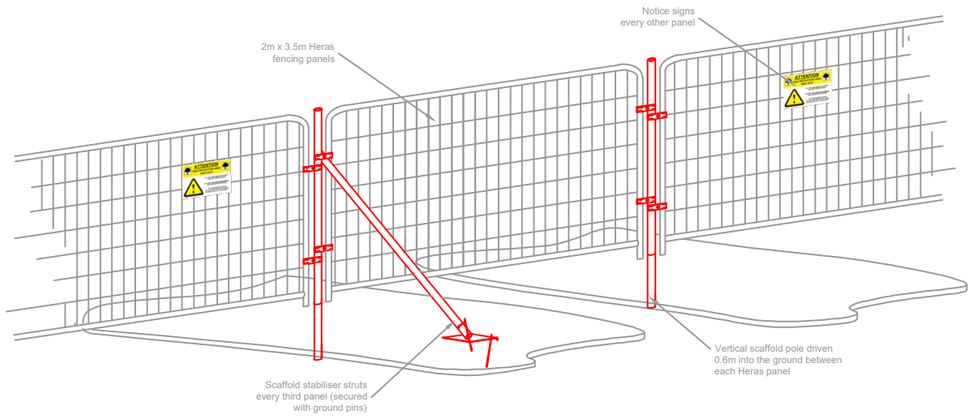
Project
Great Stone Road, Stretford
Arboricultural Impact Assessment

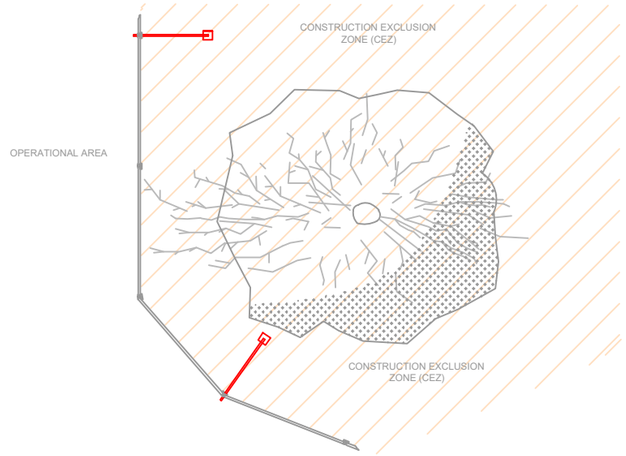
Title
Drawing 2: Tree Removal and Protection Plan

Drawing Number
D6370.01.002

Drawn	Checked	Approved	Scale	Date
TDR	AAB	JGS	1:750 @ A3	19/02/2018

Tree Protection Fencing for use on soft surfaces

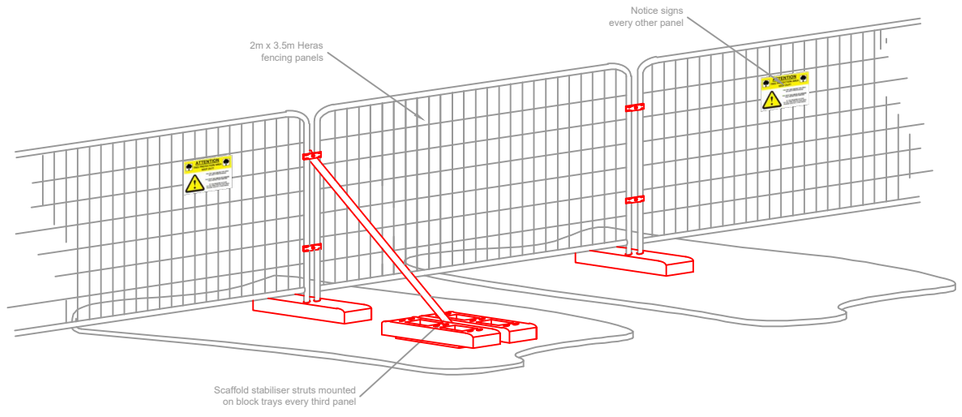


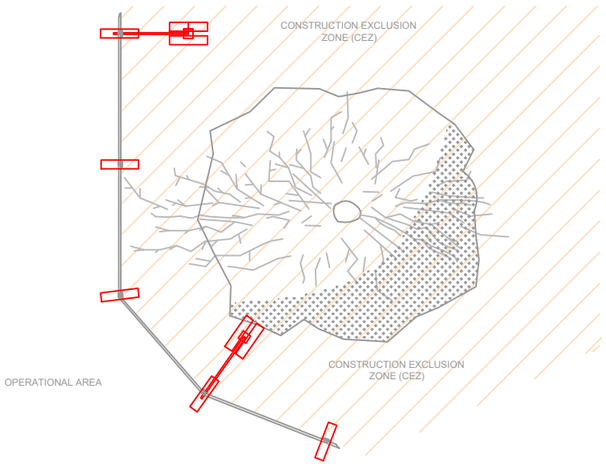


Per 3No. Heras panels (10.5m)	
Component	Quantity
2m x 3.5m Standard Heras panels	3
3m Galvenised steel scaffold pole	3
Heras fecurity fence clip	12
Heras stabilising support bar	1
Stabilising pin	2
Tree protection notice	2

Notes:

Tree Protection Fencing for use on hard surfaces





Per 3No. Heras panels (10.5m)	
Component	Quantity
2m x 3.5m Standard Heras panels	3
Rubber fencing block tray (footing)	5
Scaffold clamp double coupler	6
Heras stabilising strut support bar	3
Tree protection notice	2

Notes:

Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP
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Project

Title
Temporary tree protection fencing specifications

Drawing Number
TEP.ARB.FEN.003

Drawn	Checked	Approved	Scale	Date
TDP	RMG	JGS	(not to scale) @ A3	09/07/2019

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