

Appendix 7.4

Arboricultural Impact Assessment (Application
4)



THE
ENVIRONMENT
PARTNERSHIP



VICTORIA NORTH - APPLICATION 4

MANCHESTER

ARBORICULTURAL IMPACT ASSESSMENT IN SUPPORT OF OUTLINE PLANNING

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CONTENTS	PAGE
Executive Summary	1
1.0 Scope	2
2.0 Baseline	3
3.0 Effects	11
4.0 Mitigation.....	12

TABLES	PAGE
Table 1 Existing canopy coverage.....	3
Table 2 Summary of BS 5837 quality categorisation	4

FIGURES	PAGE
Figure 1 Site location and approximate boundary (OS Open Map – Local (Raster) 1:10,000)3	
Figure 2 View north showing lower part of G4	4

APPENDICES

- APPENDIX A: Arboricultural Survey Data
APPENDIX B: Survey Method

DRAWINGS

- Drawing 1 - Tree Constraints Plan
Drawing 2 - Parameters Plan

Executive Summary

1. TEP has been commissioned by FEC Limited to conduct a survey of land at Victoria North in Manchester and a review of designations, policies and other instruments of relevance to arboriculture as they relate to Application 4. This report presents the results and effects of proposed development.
2. 9 individual trees; 10 groups of trees; and 1 woodland compartment were recorded within influencing distance of the application site.
3. The application area has been almost entirely cleared of trees as part of associated enabling and infrastructure works covered by previously implemented planning permissions. There are occasional belts of small self-set trees within the application area and larger groups of continuous canopy cover outside.
4. The desktop review and site survey identified no Tree Preservation Orders; no trees within a Conservation Area; no ancient woodland; no veteran trees; no trees within a Community Forest; and *Deciduous Woodland* and *Hedgerow* Habitats of Principal Importance.
5. The application is for outline planning permission with all matters reserved for a phased development across severable plots comprising; non-residential floorspace comprising commercial, business, service and community; residents amenity space including within clubhouse buildings; health centre; a primary school; the final surface finish of the highway and footpath consented under HIF permission ref: 133143/VO/2022; creation of new public realm and associated landscaping, car parking provision, cycle storage, and other associated works.
6. There will be no tree removal associated with this application. All trees outside the application boundary would be retained.
7. The development would give rise to no unavoidable adverse effects that cannot be mitigated.
8. If outline planning permission is granted, for any subsequent Detailed Planning applications an Arboricultural Impact Assessment describing all effects on arboriculture based on final layouts, and identifying clearly which trees would be retained and removed; a Tree Protection Plan detailing protection measures and working methods to be observed during construction; and a scheme of new tree and hedgerow planting should be produced and could be secured by condition.
9. 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 would be necessary to review baseline data and conclusions to ensure reliability.

1.0 Scope

- 1.1 TEP has been commissioned by FEC Limited to conduct an arboricultural survey of land at Victoria North in Manchester and to make an assessment in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations for the Application 4 area.
- 1.2 This report has been produced to support a planning application. It describes the findings of field and desktop surveys; the effects that granting planning permission would have on arboriculture; and measures that are and/or should be incorporated in the proposed development.

Survey

- 1.3 The survey was undertaken in March 2021 and updated in February 2023 in accordance with BS 5837 by a qualified arboriculturist. The survey method is included at Appendix B.
- 1.4 No topographical survey was available therefore the position of trees has been estimated¹ using a combination of aerial photography and on-site observations.
- 1.5 Trees on private land outside the application boundary, and at inaccessible locations² were surveyed insofar as was practicable. Whilst reasonable effort has been made to ensure the accuracy and comprehensiveness of such records, it cannot be guaranteed.

Limitation

- 1.6 This report relates to a specific development proposal and should not be interpreted as advice in any other circumstance, including but not limited to the promotion or assessment of alternative schemes; the design of foundations; management of tree risk; and tree-related subsidence.
- 1.7 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 would be necessary to review baseline data and conclusions to ensure reliability.
- 1.8 Where the recommendations of this report have been followed, any future deterioration in tree condition shall not be attributable to the development.

¹ Estimated feature locations are marked on Drawing 1

² Limitations to the survey are described at Appendix A

2.0 Baseline

The Site

- 2.1 The site comprises part of a land parcel off Dantzic Street and north of the River Irk in Manchester. It is centred approximately on OS Grid Reference SJ 846 996 and is circa 11.16ha in size. It forms part of the wider application area known as Victoria North.



Figure 1 Site location and approximate boundary (OS Open Map – Local (Raster) 1:10,000)

Contains Ordnance Survey data © Crown copyright and database right 2019

Tree Survey

- 2.2 9 individual trees; 10 groups of trees; and 1 woodland were recorded within influencing distance of the application site. The majority of them are outside the application boundary.
- 2.3 Feature locations, their quality categories, canopy spreads and root protection areas are shown on Drawing 1. The following table provides the total canopy area for mapped trees and the total length of mapped hedgerow on Drawing 1. In some cases this may be more than the absolute area of cover due to canopy overlap between adjacent features.

Table 1 Existing canopy coverage

Trees	Groups	Woodland	Hedgerow
0.0635ha	1.4513ha	0.4472ha	0m

- 2.4 All arboricultural information recorded during the survey is presented at Appendix A.

Overview

- 2.5 There is minimal tree cover within the application area which has been almost entirely cleared of vegetation as part of previous applications for enabling work and access. Tree cover adjacent to the site, and within the wider development area comprises a small woodland and several groups of trees with early woodland features present. Larger trees are mainly present within retained areas of tree cover and only occasionally growing in the open.
- 2.6 The most significant areas of tree cover associated with the site are groups and woodland between the cleared plateau and the River Irk to the south (G4, G17, G18 and W1). Other tree cover comprises incidental self-set trees growing at the base of retaining walls and the riverbank.



Figure 2 View north showing lower part of G4

Tree Quality

- 2.7 Under BS 5837 trees are objectively assigned one of four categories to describe their quality. The table below includes a description of each category and the amount of trees within it. This information is presented by canopy area to allow comparison between features of varying size and maturity.

Table 2 Summary of BS 5837 quality categorisation³

Category	Description	Total existing
A	Trees of high quality, typically with a long remaining life expectancy; and with clear and identified merit as specimens, visually, culturally or for conservation.	0ha
B	Trees of moderate quality, typically with at least a medium remaining life expectancy; with remediable defects only; or low quality but with collective merit.	1.3089ha

³ Refer to Appendix B for the full table

Category	Description	Total existing
C	Trees of low quality, typically with at least a short remaining life expectancy; unremarkable trees; young or small trees that could be replaced.	0.6364ha
U	Trees that cannot realistically be retained in the current land use for 10 years; with serious and irreparable defects, pathogens or decline.	0ha

- 2.8 The largest proportion of trees are of moderate quality (Category B), comprising large areas of continuous tree cover outside the application boundary. The remaining trees are all low quality (Category C) and have been categorised as such due to significant defects, their young age and/or their small size.

Root Protection Areas

- 2.9 Using the results of the field survey a Root Protection Area (RPA) has been calculated in accordance with BS 5837 using each tree's stem diameter at 1.5 metres⁴. The RPA represents the minimum area around each tree that must be left undisturbed to ensure its survival.
- 2.10 Where a tree's rooting pattern is considered to have been influenced by site conditions the RPA has been adjusted or offset to most accurately represent the likely spread of roots⁵. On this site influences on root morphology are considered to be areas of hard surfacing, retaining structures, and existing watercourses.

Policy, designations and protection

Planning Policy

- 2.11 All trees are a material consideration in the planning process. Effects on trees will therefore be considered by the consenting authority. Adverse effects that cannot be mitigated and which are not acceptable on balance against other benefits may weigh against the granting of planning permission.
- 2.12 There should be a common sense ambition to limit tree loss to that which is strictly required to facilitate the proposal, and to achieve a good design. Trees which are retained should not be harmed and the proposal should present a reasonable account of the prospects for tree retention in accordance with BS 5837.

National Planning Policy Framework

- 2.13 The National Planning Policy Framework (NPPF) has an overarching environmental objective. This embeds protection and enhancement of the natural environment and biodiversity in decision making⁶.

⁴ Refer to Appendix A for RPA area calculations

⁵ See Drawing 1 for RPA shapes

⁶ NPPF paragraph 8 (c)

- 2.14 Planning policies and decision making should recognise the wider benefits from natural capital and ecosystem services, including those provided by trees and woodland, and minimise impacts on and provide net gains for biodiversity⁷.
- 2.15 Where significant harm to biodiversity cannot be avoided, mitigated, or compensation provided, planning permission should be refused⁸. Loss or fragmentation of trees and woodland may constitute or give rise to significant harm to biodiversity.
- 2.16 There is a strong policy presumption against loss or deterioration of irreplaceable habitats such as ancient woodland and ancient or veteran trees. Development resulting in the loss of either should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists⁹.

Local Planning Policy

- 2.17 Manchester City Council has a number of adopted planning documents that contain policies of relevance to trees. In particular Policy EN9 Green Infrastructure, and Policy EN15 Biodiversity and Geological Conservation within the adopted Core Strategy.

Policy EN9 Green Infrastructure

New development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management; and

The council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area.

Policy EN15 Biodiversity and Geological Conservation

The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the City. Particular consideration will be given to The Council's objective to protect and conserve the City's existing trees and woodlands and the aim for a net increase in trees across the City.

Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate, with reference to:

- the Manchester Biodiversity Strategy, which provides further details of priority habitats within Manchester and opportunities for biodiversity enhancement including corridors such as the Mersey, Medlock and Irk river*

⁷ NPPF paragraph 170 (b) (d)

⁸ NPPF paragraph 175 (a)

⁹ NPPF paragraph 175 (c)

valleys, the canals and disused railway lines and areas of managed greenspace particularly in parks;

- the Green Infrastructure Framework for Greater Manchester, which encompasses an ecological framework that seeks to guide and inform habitat creation and repair, including identifying large 'biodiversity opportunity areas' including the Moston Brook Corridor and Nutsford Vale;*
- the Open Space, Sport & Recreation Study, which identifies areas where there is a deficit of natural and semi-natural greenspace, opportunities for green corridors and other linkages;*
- Manchester's Climate Change Action Plan;*
- the Strategic Flood Risk Assessment (SFRA) for Manchester;*
- the Habitats Regulations Assessment (HRA) for Manchester, which gives detailed consideration to Special Areas of Conservation (SACs), including the Rochdale Canal SAC just outside the district boundary;*
- the River Basin Management Plan for the North West;*
- the Manchester Tree Strategy.*

Any adverse impacts on biodiversity will need to be justified against the wider benefits of the proposal, assessed against other LDF policies. Where adverse impacts are unavoidable, developers will be required to provide appropriate mitigation and/or compensation.

- 2.18 In addition to the above The Greater Manchester Combined Authority's "Places For Everyone" joint development plan includes further policies regarding Biodiversity and Green Infrastructure that may be relevant once approved.

Tree Preservation Orders

- 2.19 A check with the local authority was undertaken on 18th May 2021. The Planning Department confirmed that no trees within or adjacent to the site are protected by Tree Preservation Order.

Conservation Areas

- 2.20 A check with the local authority was undertaken on 18th May 2021. The Planning Department confirmed that no trees within or adjacent to the site are in a Conservation Area

Ancient Woodland

- 2.21 Ancient Woodland is defined in England as any area that has been wooded continuously since at least 1600 AD; it is regarded as 'irreplaceable'¹⁰. The distribution of Ancient Woodland has been assessed on the basis of Natural England's Ancient Woodland Inventory (Provisional) for England via www.magic.defra.gov.uk.
- 2.22 There is no ancient woodland within or immediately adjacent to the site.

¹⁰ NPPF Annex 2: Glossary (p.67)

Veteran Trees

- 2.23 NPPF defines veteran trees are those which, because of age, size and condition, are of exceptional biodiversity, cultural or heritage value¹¹. All ancient trees are veteran trees. Not all veteran trees are ancient, though they tend to be relatively old for the species. Ancient and veteran trees are regarded as 'irreplaceable'.
- 2.24 There is no comprehensive national register of veteran trees. The Woodland Trust maintains an inventory of significant trees which includes some ancient and veteran individuals¹². At the time of writing it contained no records of relevance to the site.
- 2.25 An assessment of each tree was made by a qualified arboriculturist as part of the tree survey. There are no veteran trees within or adjacent to the site.
- 2.26 Not all mature trees or those of high habitat interest are veterans. Trees with individual or simple assemblages of features typically associated with veteran trees were also noted¹³. Such trees may become veterans but should not be treated as such for the purposes of impact assessment.

Community Forests

- 2.27 Online mapping¹⁴ confirmed that the site is within Manchester City of Trees Community Forest.
- 2.28 An approved Community Forest Plan may be a material consideration in preparing development plans and in deciding planning applications.

Habitats of Principal Importance

- 2.29 A list¹⁵ of habitats which are of principal importance for the purpose of conserving biodiversity is maintained by the Secretary of State¹⁶. The list includes habitat types that are defined by woody vegetation, which are listed below. The geographical extent and location of these habitats (excluding hedgerow) is mapped by Natural England on the Priority Habitat Inventory¹⁷. Observations were also made to corroborate the mapping during the site survey.
- 2.30 All public authorities, including local planning authorities and statutory undertakers have a duty to have regard to the purpose of conserving biodiversity¹⁸. Habitats of Principal Importance provide a means of evaluating effects on biodiversity, and thereby a metric to demonstrate the discharge of this duty. In the context of planning, adverse effects on Habitats of Principal Importance that cannot be mitigated are material to decision making.

¹¹ NPPF Annex 2: Glossary (p. 64)

¹² <https://ati.woodlandtrust.org.uk/>

¹³ See Appendix A

¹⁴ <https://magic.defra.gov.uk/>

¹⁵ <http://jncc.defra.gov.uk/page-5706>

¹⁶ Natural Environment and Rural Communities Act 2006, 41 (1)

¹⁷ <https://magic.defra.gov.uk/MagicMap.aspx>

¹⁸ Natural Environment and Rural Communities Act 2006, 40 (1)

Deciduous Woodland

- 2.31 Six distinct types of woodland¹⁹ are amalgamated in the Inventory under the habitat type 'Deciduous Woodland'.
- 2.32 The Inventory has 2 records of Deciduous Woodland adjacent to the site. These are broadly contiguous with survey features W1, G4 and G17.

Wood Pasture and Parkland²⁰

- 2.33 The Inventory has no records of Wood Pasture and Parkland at the site.

Traditional Orchards²¹

- 2.34 The Inventory has no records of Traditional Orchards at the site.

Hedgerow²²

- 2.35 The survey identified no hedgerows²³.

Protected Species

- 2.36 No assessment of the presence of protected species has been made during the production of this report. Features of possible interest that were observed incidentally during the tree survey are recorded in Appendix A.
- 2.37 Works to and around trees have the capacity to affect protected species where present, particularly including birds, bats, great crested newts, badgers, dormice, otters and water voles. Contractors should be familiar with the locations and sensitivities of any protected species that are present and take reasonable avoidance measures or comply with the requirements of any licence agreement in accordance with the advice of an ecologist.

Birds

- 2.38 Intentional harm to a wild bird, egg, or a nest that is in use or being built is an offence²⁴. Disturbance of certain wild birds that are building a nest, or are in, on or near a nest containing eggs or young, or disturbance of dependent young is also an offence²⁵.
- 2.39 All trees are a potential habitat for nesting birds so tree work should ideally, but not essentially, be undertaken outside the bird nesting season. Between March and August, a detailed inspection of each tree should be undertaken by a qualified ecologist to confirm the absence of nesting birds immediately prior to works.

¹⁹ Upland Oakwood; Lowland Beech and Yew Woodland; Upland Mixed Ashwoods; Wet Woodland; Lowland Mixed Deciduous Woodland; Upland Birchwoods

²⁰ http://jncc.defra.gov.uk/docs/UKBAP_BAPHabitats-65-WoodPastureParkland2011.doc

²¹ http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-56-TraditionalOrchards.doc

²² http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-17-Hedgerows.doc

²³ See Appendix A

²⁴ Wildlife and Countryside Act 1981, 1 (1)

²⁵ Wildlife and Countryside Act 1981, 1 (5)

- 2.40 Some birds nest outside the core nesting season. If an active nest is found at any time of year, work likely to affect the nest must be halted until the nest becomes inactive. This will vary depending on the species of bird but is typically up to six weeks. The advice of an ecologist regarding the duration and size of a protection buffer around the nest should be sought.

Bats

- 2.41 It is an offence to damage, destroy or obstruct access to any structure or place which is used for shelter or protection²⁶, or breeding or resting²⁷ by a bat. Mature trees often contain cavities, splits and ivy, which may be attractive to bats.
- 2.42 The TEP Bat Surveys report (9082.018) identified no trees with any suitability for roosting bats.
- 2.43 If the presence of a bat, or a roost or resting site is suspected whilst undertaking works on any trees, operations must be halted and the advice of appropriately licensed ecologist should be sought.

²⁶ Wildlife and Countryside Act 1981, 9 (4)

²⁷ The Conservation of Habitats and Species Regulations 2017, 43 (1)

3.0 Effects

Proposed development

- 3.1 The proposed development seeks outline planning permission for approximately 3250 new homes set within high quality public realm and new community facilities set in a low carbon neighbourhood with all matters reserved.

Types of Effect

- 3.2 In simple terms, the effects on arboriculture comprise an account of which existing trees, groups of trees, hedgerow and woodland would not be retained within the proposed development; what significance they have; and whether adverse effects would or can be mitigated or offset.
- 3.3 This report supports an outline planning application. Tree removal and retention is a reserved matter and would not be determined by this application. Access has been created as part of a previous application and therefore is not being considered by this application
- 3.4 To reflect the varying levels of detail that are available for different aspects of the final development, this report describes the types of effect on arboriculture:
- 3.5 (i) **Known effects** are those that can be described in detail now and would occur, pending the discharge of any pre-commencement conditions. Outline planning permission would determine them;
- 3.6 (ii) **Anticipated effects** are those that can be inferred from the preliminary design and type of development that is proposed, based on professional judgement and experience. It is reasonable to assume that similar effects would arise but the particulars would not be determined or secured by this application.

Known Effects

- 3.7 There are no known affects associated with this application.

Anticipated Effects

- 3.8 The anticipated effects are derived from the Parameters Plan (Ref DR-AR-019317-Parameter Plan P1), which is reproduced at Drawing 2 and based on professional judgement.
- 3.9 If the site were developed in broad accordance with the Parameters Plan, there would be no loss of tree cover. The site has been almost entirely cleared as part of previously consented infrastructure and enabling works.

4.0 Mitigation

- 4.1 This section describes opportunities to mitigate or offset adverse effects described by the previous section. It summarises measures that are part of the proposed development and which are relied upon by this report, and measures that are not proposed but could be secured by planning condition or agreement. Conclusions are drawn regarding overall effects, and the requirements that should be imposed in order to secure the outcomes described.
- 4.2 Mitigation and offsetting measures would not be determined in full by the current application, partly because the required scope cannot yet be established. However, it is reasonable to assume that an appropriate level of mitigation in the form of tree and hedgerow planting could be accommodated within the design. All mitigation of both **known effects** and **anticipated effects** will be included within a Reserved Matters application.
- 4.3 Anticipated effects are a forecast and may change within the final scheme. They may assist the consenting authority in its understanding of the proposed development and inform planning conditions.

Proposed measures

- 4.4 The following measures are proposed and would be secured by a planning permission referencing and requiring compliance with this report:

Mitigation

- 4.5 As part of the application process for the wider development area loss of trees is considered cumulatively for each application. Should subsequent phases of development not go ahead then mitigation for those that have been implemented will need to be delivered.
- 4.6 Detail of how these measures would be delivered are set out in the Tree Replacement, Ecology and Biodiversity Net Gain Mitigation Strategy.

Recommended measures

- 4.7 In areas that have not yet been detailed, the layout should seek to avoid or minimise all adverse effects that would not be determined by this application (including those described by this report as **anticipated effects**).

Arboricultural Impact Assessment

- 4.8 The effects of a detailed development layout on arboriculture should be assessed as part of an Arboricultural Impact Assessment submitted with any future Detailed Planning applications. These should be produced in accordance with BS5837 and should describe the effects in a contemporary assessment of all aspects of the arboricultural baseline described in Section 2.0.
- 4.9 As a minimum, the Arboricultural Impact Assessment should include:
- (i) Details of the proposed layout, including buried services, utilities, ground works and any other construction element that could affect trees;

(ii) A Tree Works Plan clearly establishing which trees would be retained, removed or pruned.

(iii) A specification for any pruning works that are proposed;

(iv) Details of any mitigation or offsetting measures that are relied upon by the assessment;

(v) Conclusions regarding net effects on arboriculture.

4.10 The Arboricultural Impact Assessment should be presented in the form of a report and drawings.

Planting

4.11 A scheme of tree and hedgerow planting should be produced and implemented in response to the effects on existing trees and opportunities to augment tree, hedgerow and woodland cover.

4.12 Provision should be made for the maintenance of new planting in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape - Recommendations, and replacement of failures for a period of at least 5 years.

Conclusion

4.13 The **anticipated effects** described by this report can and should be minimised or avoided during detailed design and described by a future assessment.

APPENDIX A: Arboricultural Survey Data



Surveyor Angus Blankenstein
Survey Date 21.03.21/17.02.23
Site Victoria North, Manchester - Application 4
Drawing Ref D9082.005

Greyed out rows indicate trees surveyed as part of wider Victoria North site but removed as part of previous applications

Italicised Feature Ref: Inspection of this feature was restricted
Italicised Values: Feature value was estimated

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Canopy Ground Clearance	Stem Diameter (or range)	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Lowest Branch Height	Lowest Branch Direction	Maturity	Condition	Comments on form, condition, health and significant defects	Management recommendations in current context	BS 5837 Quality Category	Estimated Remaining Contribution
		(m)	(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(N,S,E,W)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran			A,B,C,U (1,2,3)	Long, Medium, Short, Very Short
Trees																	
T1	Goat willow	8.0	2.0	656	2	7.0	3.0	4.0	8.0	3.0	SW	Middle Age	Fair	Twin stemmed willow at foot of bank, leaning to North and west, large dead stub where third leader removed, dense ivy		C ,1	Medium
T2	Goat willow	7.0	2.0	674	2	5.0	6.0	6.5	5.0	2.0	E	Middle Age	Fair	Twin stemmed tree with further bifurcation to Eastern stem above 1.5m, basal cavity with decay, dense epicormic growth, numerous pruning wounds and stubs, major excavations to north		C ,1	Medium
T3	Sycamore	9.0	2.0	347	3	4.0	3.0	4.0	2.0	1.5	E	Middle Age	Poor	Multistemmed tree with large pile of soil to west, wounds to majority of branches, pruning wounds and stubs, unable to access		C ,3	Short
T4	Sycamore	11.0	2.0	360	1	5.5	4.0	6.0	4.0	2.0	N	Middle Age	Fair	Growing adjacent to large retaining wall, large amount of soil piled to West starting to engulf stem, mechanical wound to main stem at 3m East, good vigour		B ,1	Long
T5	Common Laburnum	5.0	0.0	592	4	5.0	5.0	4.0	3.0	0.0	N	Mature	Fair	Large multistemmed tree, split at Union, on steep bank, stems lying horizontal, good vigour		C ,1	Short
T6	Goat willow	7.0	1.0	735	6	4.0	6.0	7.0	7.0	0.5	W	Mature	Fair	Multistemmed tree with large layering branches, root plate failure to north but reacted well, excellent vigour, numerous cracks and cavities, some minor decay, dead wood throughout, large limb recently failed to south		B ,1, 3	Medium
T7	Balsam poplar	13.0	3.0	410	1	4.0	3.0	4.0	3.0	2.0	S	Middle Age	Good	Tall upright tree on edge of old viaduct, even crown, minor damage to surface roots		B ,1	Medium
T8	Silver birch	12.0	2.5	756	4	6.0	6.0	5.0	4.0	0.5	W	Mature	Good	Large multistemmed tree at top of bank, numerous small dead branches, fly tipping all around, generally free from defects		B ,1	Medium
T9	Sycamore	11.0	1.5	532	2	6.0	6.0	6.0	6.0	1.5	NW	Middle Age	Good	Riverside tree, bifurcate at base with good union, broad even crown, minor dead wood present, no major defects noted		B ,1	Long
T10	Sycamore	10.0	1.0	400	1	5.0	4.5	5.0	4.0	1.5	NW	Middle Age	Good	Balanced form, large secondary leader at 1.5m, epiphytes in Union, some minor dead wood, no major defects		B ,1	Long
T11	Silver birch	10.0	1.0	598	3	5.0	4.0	5.0	5.0	0.5	SW	Mature	Good	Multistemmed tree on River edge, broad crown, some dead wood present, no major defects		B ,1	Medium
T12	Goat willow	8.0	0.0	921	4	5.0	8.0	5.5	7.0	1.5	S	Mature	Good	Large multistemmed tree on steep riverbank, leaning to south with curved main stems, dense crown, good vigour, large amount of Japanese knotweed around base		B ,1, 3	Medium
Groups																	
G1	Silver birch, Butterfly bush species, Common ash, Wild cherry, Cherry plum, Goat willow	2 to 6	0.0	50 to 180	100							Young	Fair	Area of dense scrub and small trees, some parts recently cleared		C ,2, 3	Long
G2	Goat willow	3 to 8	0.0	50 to 180	30							Young to Middle Age	Fair	Linear group of dense multistemmed willow, part cleared to south and east, spoil heap slipping into trees from south		C ,2	Medium
G3	Western red cedar	4 to 4.5	0.0	100 to 200	27							Middle Age	Good	Screening group of conifers, unable to access, typical forms		C ,2	Long
G4	Sycamore, Silver birch, Common dogwood, Goat willow, Crack willow, Elder	2 to 13	1.5	75 to 550	250							Middle Age	Fair	On steep bank between river and site access, some woodland features developing, some failed trees, dead wood throughout, some multistemmed forms, generally tall and narrow, fly tipping and disruption to northern edge present		B ,2	Long
G5	Sycamore, Silver birch, Goat willow, Elder	3 to 10	2.0	75 to 300	21							Middle Age	Fair	Trees along fence, remnant of larger group, clearance of trees and vehicle movements to north with damage to roots and stems,		C ,3	Short
G6	Silver birch	5 to 8	1.5	75 to 120	500							Young to Middle Age	Fair	Dense stand of silver birch, very closely spaced, clearance to North and south with felled stems piled, fly tipping throughout		C ,2, 3	Medium
G7	Silver birch, Elder	2 to 7	0.5	50 to 100	5							Young	Fair	Small group of trees around tall lamppost, multistemmed elder		C ,3	Medium
G8	Silver birch	6 to 9	0.5	50 to 160	100							Young to Middle Age	Fair	Linear group of birch regeneration, cleared to North and south with felled stems piled		C ,2	Medium
G9	Silver birch, Butterfly bush species, Goat willow	2 to 12	1.0	75 to 250	60							Middle Age	Fair	Linear group along boundary wall, tall narrow for s, some clearance below, broken branches		C ,2	Medium
G10	Silver birch, Butterfly bush species, Goat willow	3 to 10	0.0	60 to 210	75							Young to Middle Age	Fair	Linear group of tall narrow trees along old viaduct, some multistemmed willow, occasional signs of clearance		C ,2	Medium
G11	Silver birch, Goat willow	3 to 8	1.0	75 to 160	20							Young to Middle Age	Fair	small cluster of trees on old viaduct, unable to access		C ,2	Medium



Surveyor Angus Blankenstein
Survey Date 21.03.21/17.02.23
Site Victoria North, Manchester - Application 4
Drawing Ref D9082.005

Greyed out rows indicate trees surveyed as part of wider Victoria North site but removed as part of previous applications

Italicised Feature Ref: Inspection of this feature was restricted
Italicised Values: Feature value was estimated

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Canopy Ground Clearance	Stem Diameter (or range)	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Lowest Branch Height	Lowest Branch Direction	Maturity	Condition	Comments on form, condition, health and significant defects	Management recommendations in current context	BS 5837 Quality Category	Estimated Remaining Contribution
		(m)	(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(N,S,E,W)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran			A,B,C,U (1,2,3)	Long, Medium, Short, Very Short
G12	Silver birch, Wild cherry, Goat willow, Elder	2 to 12	1.0	75 to 450	200							Young to Middle Age	Good	Large area of established birch regeneration with occasional willow and cherry, some woodland structure beginning to develop, some failed trees, dead wood in crowns, major fly tipping to Western end, some clearance taken place, good potential		C ,2	Long
G13	Silver birch, Goat willow	4 to 11	1.5	75 to 300	200							Young to Middle Age	Fair	Linear block of birch and willow regeneration, area of wet and contaminated ground within, clearance to south with piled stems, tall narrow birch and multistemmed willow		C ,2, 3	Medium
G14	Silver birch, Butterfly bush species, Goat willow	2 to 10	0.0	75 to 160	200							Young to Middle Age	Fair	Linear group up to northern boundary, generally small willow and taller birch, large amounts of fly tipping, cleared to south and east with stems piled		C ,2, 3	Medium
G15	Silver birch, Common hawthorn, Goat willow, Elder	3 to 10	0.5	75 to 260	100							Young to Middle Age	Fair	Off-site group of trees on steep bank, major fly tipping throughout, multistemmed willow and taller birch		C ,2, 3	Medium
G16	Silver birch, Butterfly bush species, Goat willow	3 to 10	0.5	75 to 200	50							Young to Middle Age	Fair	Small linear group next to footbridge, tall narrow birch, dense Buddleia, fence within		C ,2	Medium
G17	Sycamore, Silver birch, Common dogwood, Goat willow	2 to 10	0.5	50 to 380	150							Young to Middle Age	Fair	Group near access track, cleared to north with no regard for good practice, smashed stems piled along edge, signs of rough sleeping, tall birch and multistemmed willow, closely spaced, poor ground		C ,2	Medium
G18	Silver birch, Butterfly bush species, Goat willow, Elder	2 to 9	0.5	75 to 450	20							Middle Age	Fair	Larger willows at top of bank, some multistemmed, occasional tall birch, up to site fence where excavation has taken place - possible root damage		B ,2	Long
G19	Goat willow, Elder, Wych elm	3 to 6	0.5	75 to 200	9							Young to Middle Age	Fair	Small trees on river edge around T11,willows multistemmed		C ,2	Medium
G20	Goat willow, Elder	3 to 9	0.5	100 to 500	30							Young to Middle Age	Fair	Large multistemmed willow by river edge and extending up bank to north, some failed stems with vigorous regrowth, occasional cavities, large area of Japanese knotweed around, impenetrable to west		B ,2	Long
G21	Silver birch, Butterfly bush species, Goat willow	2.5 to 7	0.5	50 to 350	30							Young to Middle Age	Fair	Remnant of larger group of self set regeneration on top of bank next to railway. Multistemmed forms. Numerous pruning wounds and stubs. Dense undergrowth in places		C ,3	Medium
G22	Goat willow	3 to 6	1.0	150 to 250	20							Middle Age	Fair	Trees growing between edge of hard standing and river. Some multistemmed forms. Pruning wounds and stubs. Unable to access, surveyed from a distance		C ,2	Medium
Woodlands																	
W1	Field maple, Sycamore, Silver birch, Common hazel, Common hawthorn, Common ash, Norway spruce, Wild cherry, Blackthorn, Crack willow, Elder	3 to 12	2.0	75 to 600	200							Mixed Age	Fair	Small area of woodland, good range of species, denser towards river and road, limited understorey to north, signs of vandalism, numerous bark wounds, broken branches and stubs, dead wood, some failed trees, good potential		B ,1, 2, 3	Long

APPENDIX B: Survey Method

Limitation

Trees are dynamic living organisms with a constantly changing structure; even healthy trees can change or decline. Survey information is presented as being correct at the time of survey. Limitations to the reliability of the survey data are noted within Appendix A and the main report text.

Scope

All woody vegetation with a stem diameter exceeding 75mm is recorded. Below this threshold, vegetation may also be recorded at the discretion of the surveyor. The survey includes woody vegetation within a defined boundary, and on adjacent land where the characteristics, location or context of the tree mean that activity within the boundary could affect the tree, or be influenced by it. This is typically up to 15m outside the boundary.

Resolution

Vegetation is recorded as either an individual *Tree*, *Group* of trees, *Woodland*, or *Hedgerow*. This is done at the discretion of the surveyor to provide a useful resolution to the survey data, to differentiate between features with varying attributes and group those with common attributes, and collective value or function.

Typically, *Trees* are recorded where they are arranged separately; different from adjacent trees; or where the assessment would benefit from greater detail. *Groups* are coherent arboricultural features comprising trees with a collective form, function, history or management opportunities. *Woodland* is recorded where areas of tree cover have the qualities of a woodland habitat, including age and species structure, natural regeneration, and associated non-arboreal features. *Hedgerow* describes linear features largely comprising woody vegetation that are under, or could be returned to, regular hedgerow management. It should be noted that these terms are also used in other assessment types, sometimes with different definitions.

Tree locations

The location of trees is based on stem locations and canopy spreads taken from a topographical survey, where available. Where this information is not available, this is noted in Appendix A and locations should be regarded as approximate. Approximate locations are based on one or more of: GPS data captured during the survey; aerial photographs; and measurement from known points of reference. Approximate stem locations are typically accurate to within a few metres. Stem locations are shown for all *Trees*.

Groups, *Woodland* and *Hedges* are principally described in terms of their canopy outline, although stem locations may also be shown. Individual tree canopy outlines are projected on Drawings based on measurements taken as described below (see Crown Spread). *Groups*, *Woodland* and *Hedges* canopy outlines are projected based on the same hierarchy of source data as stem locations.

Tree survey

The survey is conducted from ground level by an arboriculturist, taking account of the tree, and its context. The nature of the soil is not assessed. Non-invasive assessment tools may be used as appropriate, including hypsometer, measuring tape, probe and nylon mallet.

The following attributes are recorded for each feature (see Arboricultural Survey Data Sheets at Appendix A):

Reference Number	A unique code per feature, typically but not necessarily a chronological sequence, in the form <i>Tn</i> for <i>Trees</i> ; <i>Gn</i> for <i>Groups</i> ; <i>Wn</i> for <i>Woodlands</i> ; and <i>Hn</i> for <i>Hedgerows</i>
Species	The common name is given. All species are listed for <i>Groups</i> , <i>Woodland</i> and <i>Hedgerows</i> . The Latin name may also be given if further clarification is required.
Height	Top height recorded in metres, or the range for <i>Groups</i> , <i>Woodland</i> and <i>Hedgerows</i>
Canopy Ground Clearance	The height of the canopy above ground level in metres
Stem Diameter	A measurement taken at 1.5 metres above ground level, or the nearest representative point below, in millimetres. For multi-stemmed trees a single figure is calculated according to BS5837 4.6. For <i>Groups</i> , <i>Woodland</i> and <i>Hedgerows</i> , the range of diameters

No. of Stems / Individuals	The number of stems arising below a height of 1.5 metres, or for <i>Groups</i> , <i>Woodland</i> and <i>Hedgerows</i> an estimate or count of the number of trees
Crown Spread	Radial branch spread in metres at cardinal points (N, S, E, W) from the location of the <i>Tree</i> stem at ground level (for <i>Groups</i> , <i>Woodland</i> and <i>Hedgerows</i> , see <i>Tree Locations</i>)
Lowest Branch Height	The height of the first significant branch at the point of attachment (<i>Trees</i> only)
Lowest Branch Direction	The direction of growth of the first significant branch from the point of attachment (<i>Trees</i> only)
Maturity	Classification describing age relative to the species, and size and growth potential, in order to inform management decisions • Young means small and/or recently planted and could be relocated, or replaced on a like for like basis • Middle Age means established and independent, within the growth stage of life, and with potential to continue increasing in height and/or spread • Mature means having reached ultimate height and/or spread, given the location and surroundings; further increases will be slow or limited • Mixed Age (<i>Groups</i>, <i>Woodland</i> and <i>Hedgerows</i> only) means comprising all three maturity classes
Condition	An overall assessment of a feature's physiological and structural state, informing longevity and quality categorisation, and supported by <i>Comments</i> • Good condition means with vitality and resilience commensurate with species and age, and without significant defects or pathogens • Fair condition means with tolerable reduction of vitality and resilience, and/or remediable or tolerable defects and/or pathogens • Poor condition means with declining or significant loss of vitality and resilience, and/or significant and irreparable defects and/or pathogens • Dead condition means without photosynthetic or metabolic capacity, or moribund and in imminent terminal decline • Mixed (<i>Groups</i> and <i>Woodland</i>) means comprising more than one condition class • Veteran means trees of exceptional value, meeting recognised criteria including age, size and characteristics. Classification is partly informed by the sustained presence of structural defects, physiological decline, and pathogens, and their contribution to biodiversity. Undesirable characteristics in ordinary trees may be desirable in veteran trees, therefore <i>Veteran</i> can be understood as a superlative <i>Condition</i> that supersedes other categories (excluding <i>Dead</i>).
Comments	A description of all significant characteristics of the feature and its context that are not described by other attribute fields; including observations to support the classification of <i>Condition</i> , <i>Quality Category</i> and <i>Estimated Remaining Contribution</i> as appropriate
Management Recommendations	Recommendations for arboricultural works based on the current land use, in the interests of good arboricultural practice. These are incidental to the primary survey purpose, and not a comprehensive schedule in pursuit of any particular objective.
BS 5837 Quality Category	Tree quality assessment based on Table 1 of BS 5837:2012 (see below) comprising quality categories A , B , C and U and sub-categories 1 , 2 and 3
Estimated Remaining Contribution	A forecast of the durability of the feature in its current form and context, and therefore the reliance that can be placed on any benefits or functions it provides. This is influenced by <i>Species</i> and <i>Condition</i>, and is not necessarily a forecast of life expectancy. • Long means more than 40 years • Medium means 20 to 40 years • Short means 10 to 20 years • Very Short means less than 10 years

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

Table 1: Extract from **British Standards Institution (2012) BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations**, page 9

Note on Root Protection Areas:

Data is captured during the survey to inform the design of Root Protection Areas (RPA). These are a design tool, representing the area around a tree in which restrictions to some activities may be required to avoid significant harm, particularly to roots and soil. The RPA is a function of *Stem Diameter*, and additional considerations including management history, barriers to root growth, topography, ground conditions and tree characteristics. These factors are combined by an arboriculturist to produce a buffer zone for each feature from which the exclusion of construction activities would ensure the continued reliability of the survey data at Appendix A, including *Condition*, *BS 5837 Quality Category* and *Estimated Remaining Contribution*.

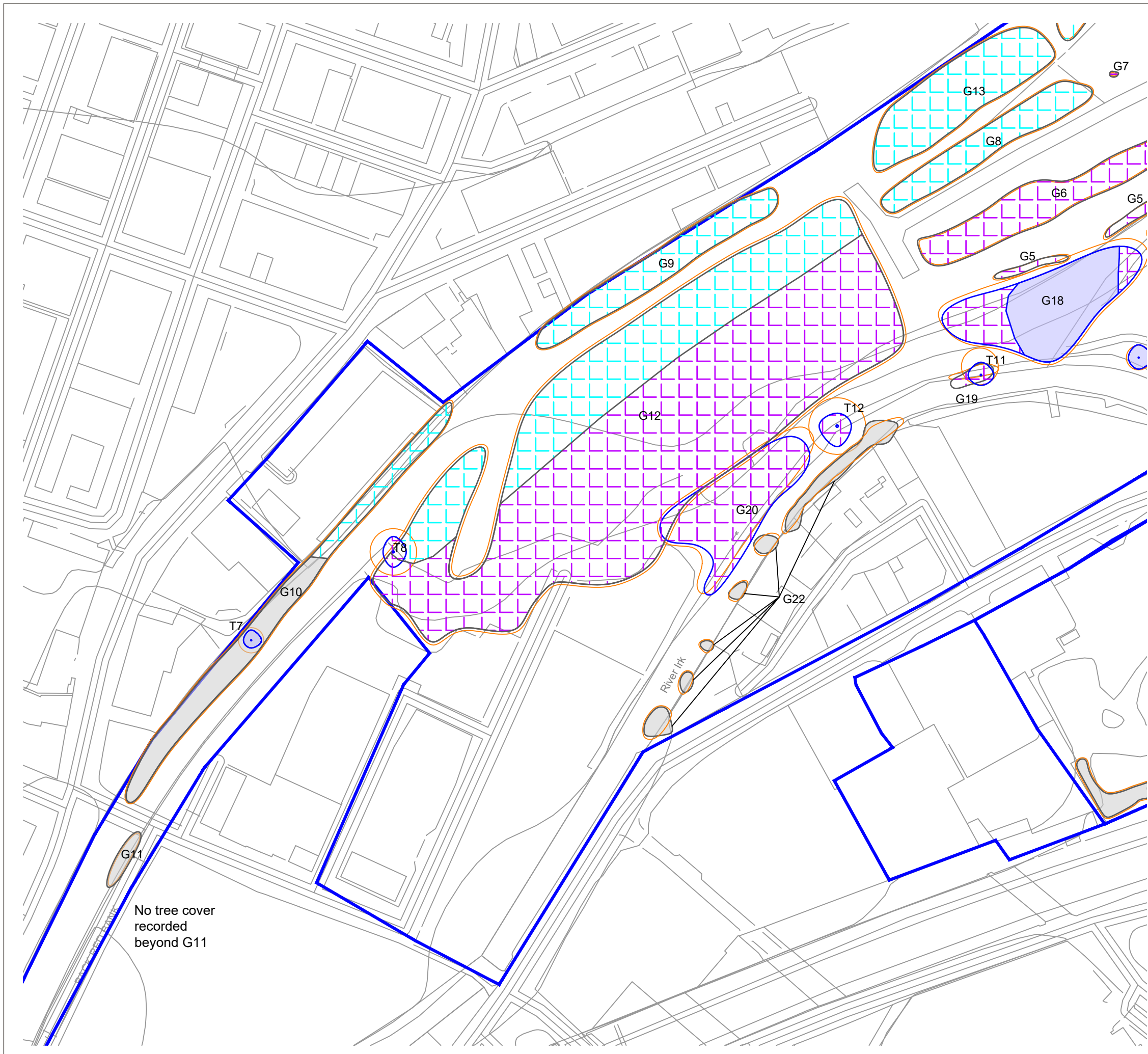
For *Trees*, RPA is defined as a circle with a radius 12 times the *Stem Diameter*, which may be modified to reflect the considerations above.

For *Groups* and *Woodland* RPA is based on the size and location of peripheral constituent trees, and presented as an offset from the canopy edge giving equivalent or greater protection to all trees of any size, or modified to reflect significant variation in constituent tree sizes and/or the considerations above.

For *Hedgerow*, no RPA is shown. Typically, hedgerow requires a smaller stand-off than trees due to reduced crown dimensions. Any stand-off should include sufficient space for access and ongoing management and should therefore normally be based on the canopy spread rather than root spread.

DRAWINGS

Drawing 1 - Tree Constraints Plan
Drawing 2 - Parameters Plan



KEY

[This drawing must be reproduced in colour]

- T1/G1/W1 Trees
- Root Protection Area (RPA)
- Survey Boundary

All tree locations are approximate and based on

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)
- Trees surveyed but removed as part of application 1
- Trees surveyed but removed as part of application 2

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



Rev	Description	Drawn	Approved	Date
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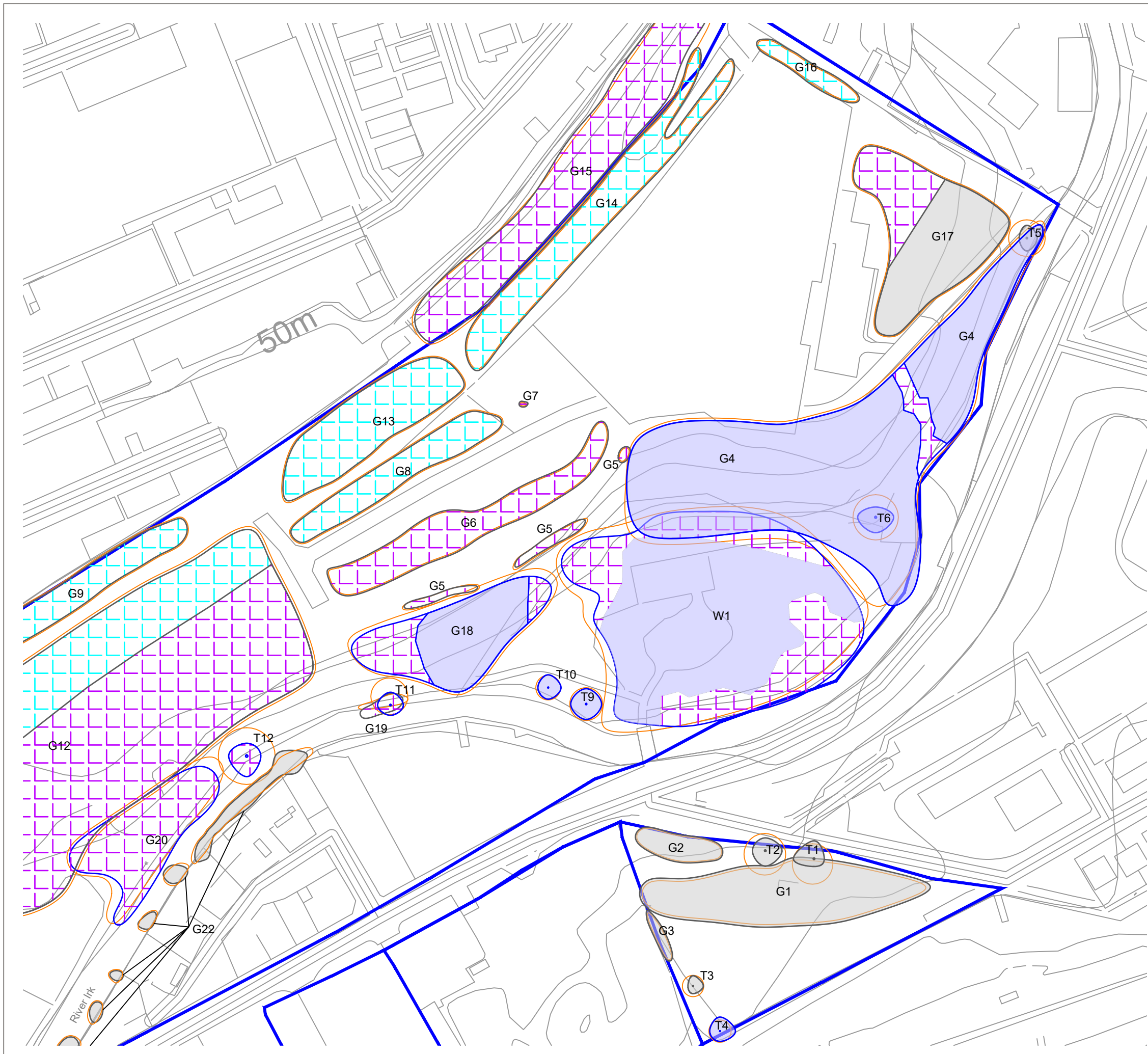
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Project
Victoria North Enabling Works - Application 4
Arboricultural Impact Assessment
Title
Drawing 1: Tree Constraints Plan [BASELINE] (Sheet 1 of 2)

Drawing Number
D9082.005

Drawn	Checked	Approved	Scale	Date
AAB	RMG	JGS	1:1500 @ A3	30/03/2022



KEY

[This drawing must be reproduced in colour]

- T1/G1/W1 Trees
- Root Protection Area (RPA)
- Survey Boundary

All tree locations are approximate and based on

Tree Quality Categorisation

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

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



Rev	Description	Drawn	Approved	Date
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Project

Victoria North Enabling Works - Application 4
Arboricultural Impact Assessment

Title

Drawing 1: Tree Constraints Plan [BASELINE] (Sheet 2 of 2)

Drawing Number
D9082.006

Drawn	Checked	Approved	Scale	Date
AAB	RMG	JGS	1:1500 @ A3	30/03/2023



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Do not scale from this drawing. Verify all dimensions on site. Drawing should be read in conjunction with information from all other design consultants and contractors. All drawings in digital format are for reference only, paper copies are available on request.

02575m

Legend:

Development plots

Potential route between plots

Development plot area identified as removed from flood zone in the FRA.

Zone of potential development plot deviation subject to an additional Flood Risk Assessment as part of a Detailed Planning Application.

Development plot suitable for above ground development. Development at grade may be appropriate subject to an additional Flood Risk Assessment as part of a Detailed Application.

Development zone including public realm

Public realm including rights of way, emergency access, car parking, sustainable urban drainage systems and infrastructure.

Dantzijskade enhancements

Neighbourhood road

Consented improved green infrastructure works within outline planning application boundary. Application number: 133143/VO/2022

Key public open space

Consented improved green infrastructure works outside outline planning application boundary. Application number: 133143/VO/2022

+/- 00m

Limit of development plot boundary deviation plus or minus by noted dimension in metres.

- 00m

Limit of development plot boundary deviation minus by noted dimension in metres.

Outline planning application boundary

P13.01

S3-Suitable for review and comment

20/12/2022

Rev

Details

Drwn

Chkd

Date

MACCREANOR LAVINGTON

Proj. No. 524

Sheet Name: Parameter Plan P1 - Development Plots and Public Realm

CDE ID: RDB-MLM-DR-AR-019317

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FEC

Scale: 1:1250

Size: A1

Rev: P13.01



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