



THE
ENVIRONMENT
PARTNERSHIP



VICTORIA NORTH INFRASTRUCTURE MANCHESTER ARBORICULTURAL IMPACT ASSESSMENT

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Document Title	Arboricultural Impact Assessment
Prepared for	Arup
Prepared by	TEP - Warrington
Document Ref	9082.01.001

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Date	October 2021
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Amendment History					
Version	Date	Modified by	Check / Approved by	Reason(s) issue	Status
0.1	05/10/21	AAB	HEE	Approval	Draft
1.0	05/10/21	AAB	TDP	Issue	Superseded
2.0	12/10/21	AAB	TDP	Updated in line with client comments	Final

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Executive Summary

1. TEP has been commissioned by Arup to conduct a survey of land between Dantzic Street and Red Bank in Manchester and a review of designations, policies and other instruments of relevance to arboriculture. This report presents the results and effects of proposed development.
2. 1 individual tree (T1); and 8 groups of trees (G1-G8) were recorded within influencing distance of the application site.
3. The tree population comprises mainly large areas of young to middle age self-set silver birch and willow with very occasional larger individuals.
4. The desktop review and site survey identified no Tree Preservation Orders; no trees within a Conservation Area; no ancient woodland; no veteran trees; and no arboreal Habitats of Principal Importance. All trees on site are located within the Manchester City of Trees Community Forest.
5. The proposed development comprises demolition of the Creamline Dairies building, construction of a temporary haul road to enable access to the site for future remediation and construction works.
6. Tree groups comprising approximately 1.05ha would be removed to accommodate the proposals. Some of these are outside the application boundary.
7. The development would give rise to no adverse effects that cannot be mitigated.
8. New planting is not proposed as part of this application which covers enabling works to facilitate the delivery of a wider application that will ultimately consider the cumulative effects on tree cover resulting from all previous phases. Replacement planting will therefore be deferred until the final design is produced. Should the further works not go ahead new planting to offset the losses from this work should be required.
9. Tree protection measures to be observed during construction are proposed in the form of a Tree Protection Plan.
10. 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.
11. All trees that would be retained can be protected in accordance with BS5837:2012. Where the recommendations of this report have been followed, any future deterioration in tree condition shall not be attributable to the development.

1.0 Scope

- 1.1 TEP has been commissioned by Arup to conduct an arboricultural survey of land between Dantzic Street and Red Bank in Manchester and to make an assessment in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.
- 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 on 29th March 2021 in accordance with BS 5837 by a qualified arboriculturist. The survey method is included at Appendix B.
- 1.4 A topographical survey was used to record the position of trees and vegetation (drawing reference: PS-2158-TS-00). Where trees were not shown on the topographical survey, their locations were estimated¹.
- 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 1.9ha in size. It forms part of a 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

- 2.2 The topography of the site is flat comprising part of a large plateau. There is a disused viaduct extending to the west and the northern boundary is formed by a large retaining wall towards the western end and steep bank towards the east
- 2.3 At the time of the survey, the site was closed to the public although there are occasional breaks in the security fencing allowing unauthorised access with signs of rough sleeping throughout.

Tree Survey

- 2.4 1 individual trees (T1); 8 groups of trees (G1-G8) were recorded within influencing distance of the application site.
- 2.5 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
0.0078ha	2.4318ha	0ha	0m

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

Overview

- 2.7 The site comprises former railway sidings, demolished office buildings and car parking as well as the former Creamline Dairies site. It has been fenced off from public access for many years and is now covered in birch and willow regeneration. It comprises a small part of a much larger site.



Figure 2 Typical tree cover on site showing areas of clearance.

- 2.8 Tree cover is almost exclusively dense groups of young to middle age self-set silver birch and goat willow that are very compact with tall narrow forms (Groups G5, G6, G7). The majority of these groups have been subject to a large amount of clearance with felled stems piled along the edges of the retained trees. This has taken place to facilitate ground investigations on the plateau and installation of site security fencing around the edges.
- 2.9 There is a single individual tree (T1) situated just outside the application boundary. It is a well-established silver birch with a multi-stemmed form and no significant defects.

Tree Quality

- 2.10 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. Hedgerows have not been categorised.

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.	0.0078ha
C	Trees of low quality, typically with at least a short remaining life expectancy; unremarkable trees; young or small trees that could be replaced.	2.4318ha
U	Trees that cannot realistically be retained in the current land use for 10 years; with serious and irreparable defects, pathogens or decline.	0ha

- 2.11 The vast majority of trees are low quality (Category C) by virtue of their size or condition and their self-set nature. Overall their value is mainly as habitat with some limited landscape value as well. There is a single moderate quality feature (Category B) within this part of the site, the individual tree T1. This tree is notably larger than the other trees surveyed with greater landscape value.

Root Protection Areas

- 2.12 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.
- 2.13 Where a trees 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 existing and historic areas of hard surfacing as well as walls and other structures.

Policy, designations and protection

Planning Policy

- 2.14 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.

³ Refer to Appendix B for the full table

⁴ Refer to Appendix A for RPA area calculations

⁵ See Drawing 1 for RPA shapes

- 2.15 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

- 2.16 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.
- 2.17 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.
- 2.18 Opportunities should be taken to incorporate trees into developments, ensure appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. New streets should be tree-lined unless there are clear, justifiable and compelling reasons why this would be inappropriate⁸.
- 2.19 Where significant harm to biodiversity cannot be avoided, mitigated, or compensation provided, planning permission should be refused⁹. Loss or fragmentation of trees and woodland may constitute or give rise to significant harm to biodiversity.
- 2.20 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 exists¹⁰.

Local Planning Policy

- 2.21 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

⁶ NPPF paragraph 8 (c)

⁷ NPPF paragraph 174 (b) (d)

⁸ NPPF paragraph 131

⁹ NPPF paragraph 180 (a)

¹⁰ NPPF paragraph 180 (c)

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 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.

- 2.22 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

- 2.23 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

- 2.24 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 within a Conservation Area.

Ancient Woodland

- 2.25 Ancient Woodland is defined in England as any area that has been wooded continuously since at least 1600 AD; it is regarded as 'irreplaceable'¹¹. 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.

- 2.26 There is no ancient woodland within or adjacent to the site.

Veteran Trees

- 2.27 NPPF defines veteran trees are those which, because of age, size and condition, are of exceptional biodiversity, cultural or heritage value¹². 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'.

- 2.28 There is no comprehensive national register of veteran trees. The Woodland Trust maintains an inventory of significant trees which includes some ancient and veteran individuals¹³. At the time of writing it contained no records of relevance to the site.

- 2.29 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.

- 2.30 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 noted¹⁴. Such trees may become veterans but should not be treated as such for the purposes of impact assessment.

Community Forests

- 2.31 Online mapping¹⁵ confirmed that the site is within the Manchester City of Trees Community Forest.

¹¹ NPPF Annex 2: Glossary (p.67)

¹² NPPF Annex 2: Glossary (p. 64)

¹³ <https://ati.woodlandtrust.org.uk/>

¹⁴ See Appendix A

¹⁵ <http://magic.defra.gov.uk/>

- 2.32 An approved Community Forest Plan may be a material consideration in preparing development plans and in deciding planning applications.

Habitats of Principal Importance

- 2.33 A list¹⁶ of habitats which are of principal importance for the purpose of conserving biodiversity is maintained by the Secretary of State¹⁷. 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 Inventory¹⁸. Observations were also made to corroborate the mapping during the site survey.
- 2.34 All public authorities, including local planning authorities and statutory undertakers have a duty to have regard to the purpose of conserving biodiversity¹⁹. 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.

Deciduous Woodland

- 2.35 Six distinct types of woodland²⁰ are amalgamated in the Inventory under the habitat type 'Deciduous Woodland'.
- 2.36 The Inventory has 1 record of Deciduous Woodland at the site. This is broadly contiguous with survey feature G4. However, observations made during field work; homogenous age and species structure and limited understorey development, suggest that this group should not be regarded as such.

*Wood Pasture and Parkland*²¹

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

*Traditional Orchards*²²

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

*Hedgerow*²³

- 2.39 Hedgerow is any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps are less than 20m wide. It may include banks, walls, ditches, herbaceous vegetation, climbing plants or trees within 2m of the centre line. All hedgerows which comprises at least 80% woody native species are included.

¹⁶ <http://jncc.defra.gov.uk/page-5706>

¹⁷ Natural Environment and Rural Communities Act 2006, 41 (1)

¹⁸ <https://magic.defra.gov.uk/MagicMap.aspx>

¹⁹ Natural Environment and Rural Communities Act 2006, 40 (1)

²⁰ Upland Oakwood; Lowland Beech and Yew Woodland; Upland Mixed Ashwoods; Wet Woodland; Lowland Mixed Deciduous Woodland; Upland Birchwoods

²¹ http://jncc.defra.gov.uk/docs/UKBAP_BAPHabitats-65-WoodPastureParkland2011.doc

²² http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-56-TraditionalOrchards.doc

²³ http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-17-Hedgerows.doc

- 2.40 The survey identified no hedgerows²⁴. Additionally, no linear tree group features were found that should be regarded as meeting the above description.

Protected Species

- 2.41 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.
- 2.42 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

- 2.43 Intentional harm to a wild bird, egg, or a nest that is in use or being built is an offence²⁵. 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 offence²⁶.
- 2.44 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.
- 2.45 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

- 2.46 It is an offence to damage, destroy or obstruct access to any structure or place which is used for shelter or protection²⁷, or breeding or resting²⁸ by a bat. Mature trees often contain cavities, splits and ivy, which may be attractive to bats.
- 2.47 The Bat Surveys report (9082.003) identified that all trees on site provide only negligible bat roosting potential.
- 2.48 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.

²⁴ See Appendix A

²⁵ Wildlife and Countryside Act 1981, 1 (1)

²⁶ Wildlife and Countryside Act 1981, 1 (5)

²⁷ Wildlife and Countryside Act 1981, 9 (4)

²⁸ The Conservation of Habitats and Species Regulations 2017, 43 (1)

3.0 Effects

- 3.1 In simple terms, the effects on arboriculture comprises 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.

Proposed development

- 3.2 The proposed development comprises demolition of buildings on the former Creamline Dairy site and construction of a temporary haul road to provide construction access into the main Victoria North construction site.
- 3.3 This development is dependent on the subsequent applications, should these not go ahead it will either not be required or the site can be reinstated.
- 3.4 The proposed layout is shown on Drawing 2 and Drawing 3 and is based on drawing VNIF-ARP-00-YYY-M3-CH-100 provided by the client.

Tree Removal

- 3.5 This section details all tree removal which is proposed as part of the development. All trees not identified for removal can be retained in accordance with BS 5837.
- 3.6 In total, tree groups comprising approximately 1.05ha would be removed.

Table 3 Reference number and location of features that would be removed

	Trees	Groups	Woodland	Hedgerow
Remove (on-site)	-	G1, G2, G5, G6, G8, (G3, G4)	-	-
Remove (off-site)	-	-	-	-

(Features in brackets are those of which a part would be removed and part retained)

- 3.7 If planning permission is granted with reference to this report, the removal of any feature not listed above and shown on Drawing 2 for removal would constitute a material amendment and may therefore require an application to vary the consent.
- 3.8 The removal of trees that are not wholly within the application area is proposed to allow for working space, this additional land is also under the control of the client. This represents a "worst-case" scenario and can potentially be avoided by careful control of operations during the construction works.
- 3.9 The following table provides an overview of the quantity and the percentage of trees that would be removed and a breakdown of the number of instances of removal by quality category. It uses canopy area to describe effects on Trees, Groups and Woodland. The reported areas may be higher than the absolute area of tree cover on the site due to overlap between adjacent features.

Table 4 Quantity and percentage of trees to be removed

Feature	Number of features affected				
	Category A	Category B	Category C	Category U	Hedges
Trees	0	0	0	0	0
Groups	0	0	7	0	
Woodland	0	0	0	0	
Total loss	0ha	0ha	1.05ha	0ha	0m
Proportion of existing	0%	0%	43.2%	0%	0%

- 3.10 Almost half of the tree cover associated with the site, and in practical terms, everything within the working area required to construct the haul road would be removed. All of these are low quality, closely spaced self-set trees of small stature.
- 3.11 Although individually these trees are small and with little arboricultural merit, as a collective they provide a large area of habitat potential as well as ecosystem services that would be lost. Their small size and self-set nature means that they could be readily replaced in the short term.

Policy compliance and effects on designated or protected features

Planning Policy

National Planning Policy Framework²⁹

- 3.12 The removal of trees, without mitigation, constitutes an adverse effect that is likely to be regarded by consenting authorities as contrary to the overarching environmental objective to protect and enhance the natural environment and biodiversity.

Community Forest

- 3.13 The proposed development would result in a net decrease in tree canopy cover within a Community Forest. It would therefore have a negative effect on the delivery of the policies and objectives of the Community Forest.

Protected Species

- 3.14 The effects of the proposed development on protected species and significance thereof is considered by the relevant ecology reports including the Ecology ES Chapter.

²⁹ See sections below for effects on Ancient Woodland, Veteran Trees and Community Forests

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 The table below provides an overview of effects on the receptors described in the preceding sections. Within it, Column (1) describes the outcome for each receptor without mitigation; Column (2) reflects whether any mitigation would be secured by the current application; Column (3) represents whether predicted effects are (or could be rendered) neutral or positive; and Column (4) defines the outcome in simple terms.

Table 5 Summary of effects and mitigation

Receptor	(1) Adverse effect*	(2) Mitigation proposed	(3) Mitigation possible	(4) Residual effect
Tree cover	Yes	No	Yes	Pending
Tree condition ³⁰	Yes	Yes	Yes	Neutral
Ancient Woodland	N/A	N/A	N/A	N/A
Veteran Trees	N/A	N/A	N/A	N/A
Deciduous Woodland	N/A	N/A	N/A	N/A
Wood Pasture and Parkland	N/A	N/A	N/A	N/A
Traditional Orchard	N/A	N/A	N/A	N/A
Hedgerow	N/A	N/A	N/A	N/A

*Without mitigation

- 4.3 **Positive** residual effects represent benefits that would be delivered by the proposed development.
- 4.4 **Neutral**³¹ residual effects are those that should have no weight in decision making.

³⁰ In this context, whether there would be a risk of harm to existing trees during development (without protection)

³¹ Including negligible and non-material effects

4.5 **Negative** residual effects cannot be mitigated or offset and represent adverse effects of the proposed development. They may be acceptable in the planning balance on consideration of other benefits delivered by the proposed development.

4.6 **Pending** residual effects are those for which mitigation or offsetting can be secured after consent has been granted, typically by planning condition. It is assumed by this report that they would be.

Proposed measures

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

Layout

4.8 The retention of trees that has been assessed as possible within the proposed layout would be observed by the developer and all appointed contractors; tree removal would be limited to that illustrated on Drawing 2.

Tree Protection

4.9 A Tree Protection Plan is provided at Drawing 3. It shows the arrangement of temporary protection measures that would be installed prior to the commencement of any works, including ground investigation, setting out, compound establishment or delivery of any plant or materials.

4.10 Tree protection measures will follow the specification provided at Drawing 4.

4.11 Temporary protection measures would be maintained as shown during the entire construction process and would not be removed or realigned until all buildings, structures, hard surfaces, utilities, drainage, demolition and the removal of scaffolding, plant, compounds and surplus material has been completed.

Planting

4.12 New planting is not proposed as part of this application. This application covers enabling works to facilitate the delivery of a wider application that should ultimately consider the cumulative effects on tree cover resulting from all previous phases. Replacement planting will therefore be deferred until the final design is produced. This commitment should be secured by planning condition.

4.13 Replacement planting should seek to increase the age, size and species diversity of trees on site.

4.14 If the further development works do not go ahead, then tree loss that results from this element will need to be mitigated and a scheme of replacement planting should be produced. It will be possible to effectively replace all trees lost with an equivalent level.

4.15 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.

APPENDIX A: Arboricultural Survey Data



Surveyor Angus Blankenstein
 Survey Date 29.03.2021
 Site Victoria North Enabling Works
 Drawing Ref D9082.01.001-002

APPENDIX A: Arboricultural Survey Data Sheets

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

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	Silver birch	12.0	2.5	756	4	6.0	6.0	5.0	4.0	0.5	W	Middle Age	Good	Large multistemmed tree at top of bank, numerous smalls was branches, fly tipping all around, generally free from defects		B ,1	Medium
Groups																	
G1	Silver birch	6 to 9	0.5	50 to 160	n/a							Young to Middle Age	Fair	Linear group of birch regeneration, cleared to North and south with felled stems piled		C ,2	Medium
G2	Silver birch, Butterfly bush species, Goat willow	2 to 12	1.0	75 to 250	n/a							Middle Age	Fair	Linear group along boundary wall, tall narrow for s, some clearance below, broken branches		C ,2	Medium
G3	Silver birch, Butterfly bush species, Goat willow	3 to 10	0.0	60 to 210	n/a							Young to Middle Age	Fair	Linear group of tall narrow trees along old viaduct, some multistemmed willow, occasional signs of clearance		C ,2	Medium
G4	Silver birch, Wild cherry, Goat willow, Elder	2 to 12	1.0	75 to 450	n/a							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
G5	Silver birch, Goat willow	4 to 11	1.5	75 to 300	n/a							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
G6	Silver birch, Butterfly bush species, Goat willow	2 to 10	0.0	75 to 160	n/a							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
G7	Silver birch, Common hawthorn, Goat willow, Elder	3 to 10	0.5	75 to 260	n/a							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
G8	Silver birch, Butterfly bush species, Goat willow	3 to 10	0.5	75 to 200	n/a							Young to Middle Age	Fair	Small linear group next to footbridge, tall narrow birch, dense Buddleia, fence within		C ,2	Medium

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 (m²) 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 tree's 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 <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

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.

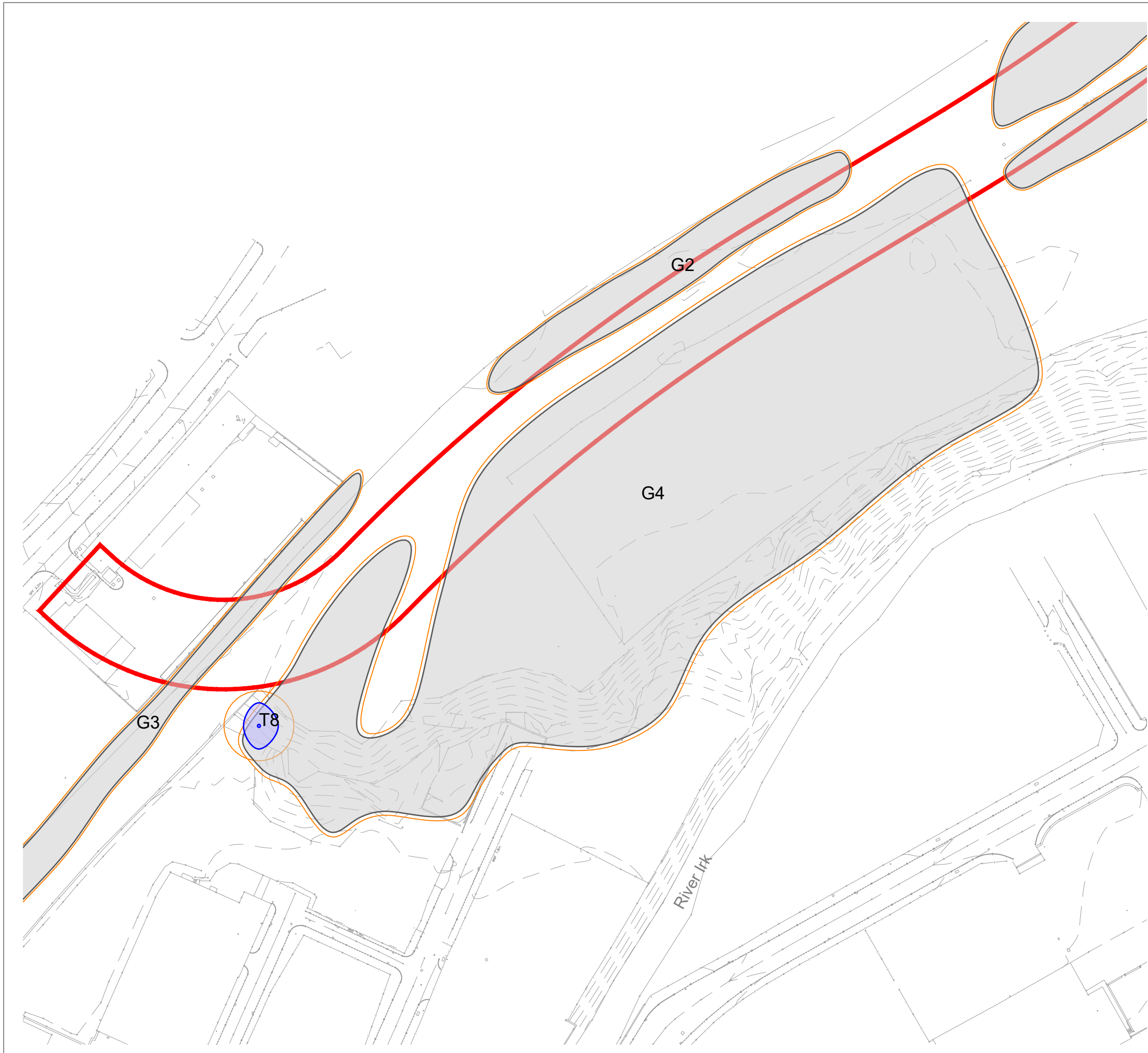
DRAWINGS

Drawing 1 - Tree Constraints Plan

Drawing 2 - Tree Works Plan

Drawing 3 – Tree Protection Plan

Drawing 4 – Tree Protection Fencing Specification



KEY

[This drawing must be reproduced in colour]

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

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)

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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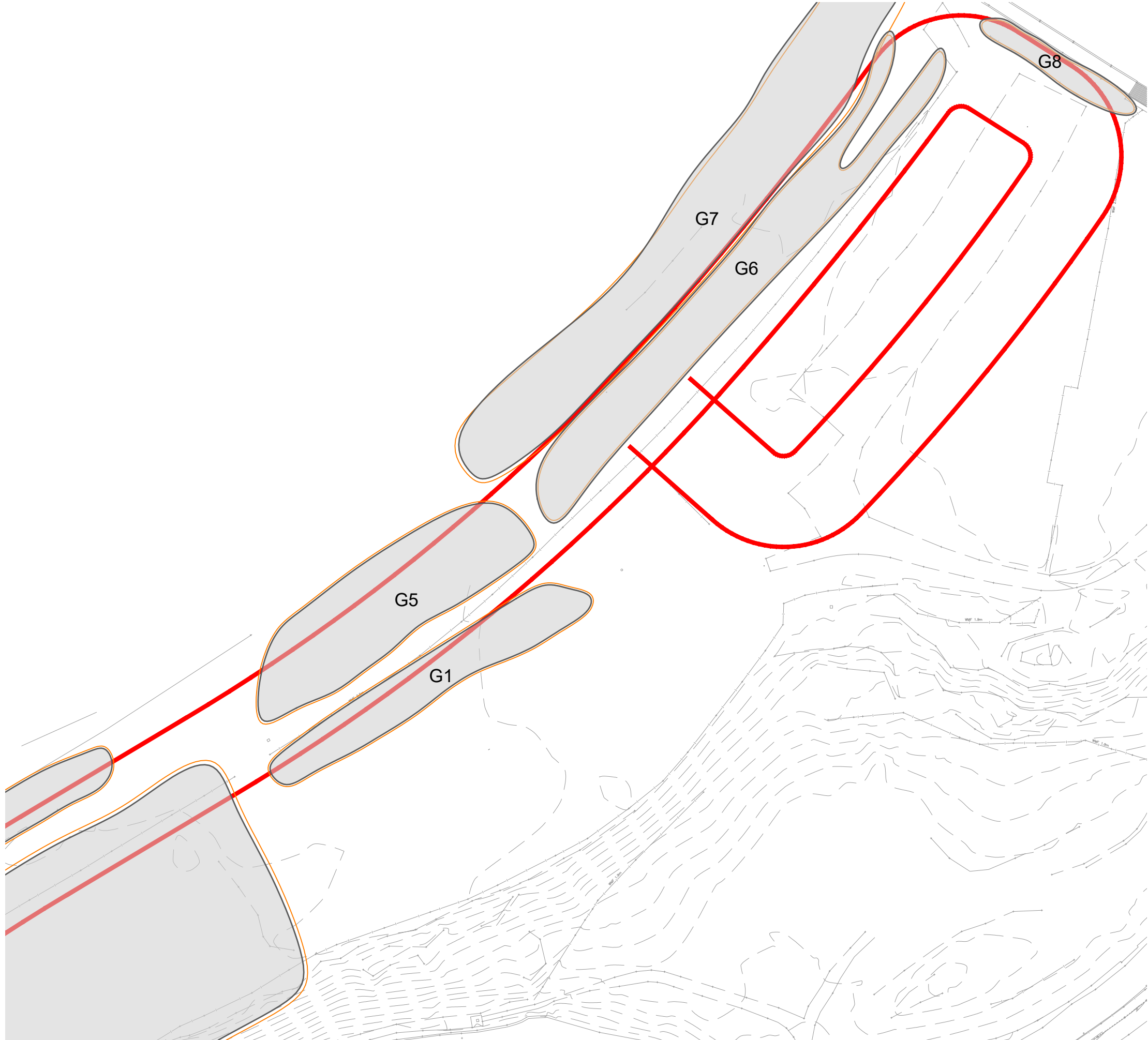


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Project
Victoria North Enabling Works, Manchester
Arboricultural Impact Assessment
Title
Drawing 1: Tree Constraints Plan [BASELINE] (Sheet 1 of 2)

Drawing Number
D9082.01.001

Drawn	Checked	Approved	Scale	Date
AAB	HEE	JGS	1:1000@ A3	05/10/2021



KEY

[This drawing must be reproduced in colour]

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

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)

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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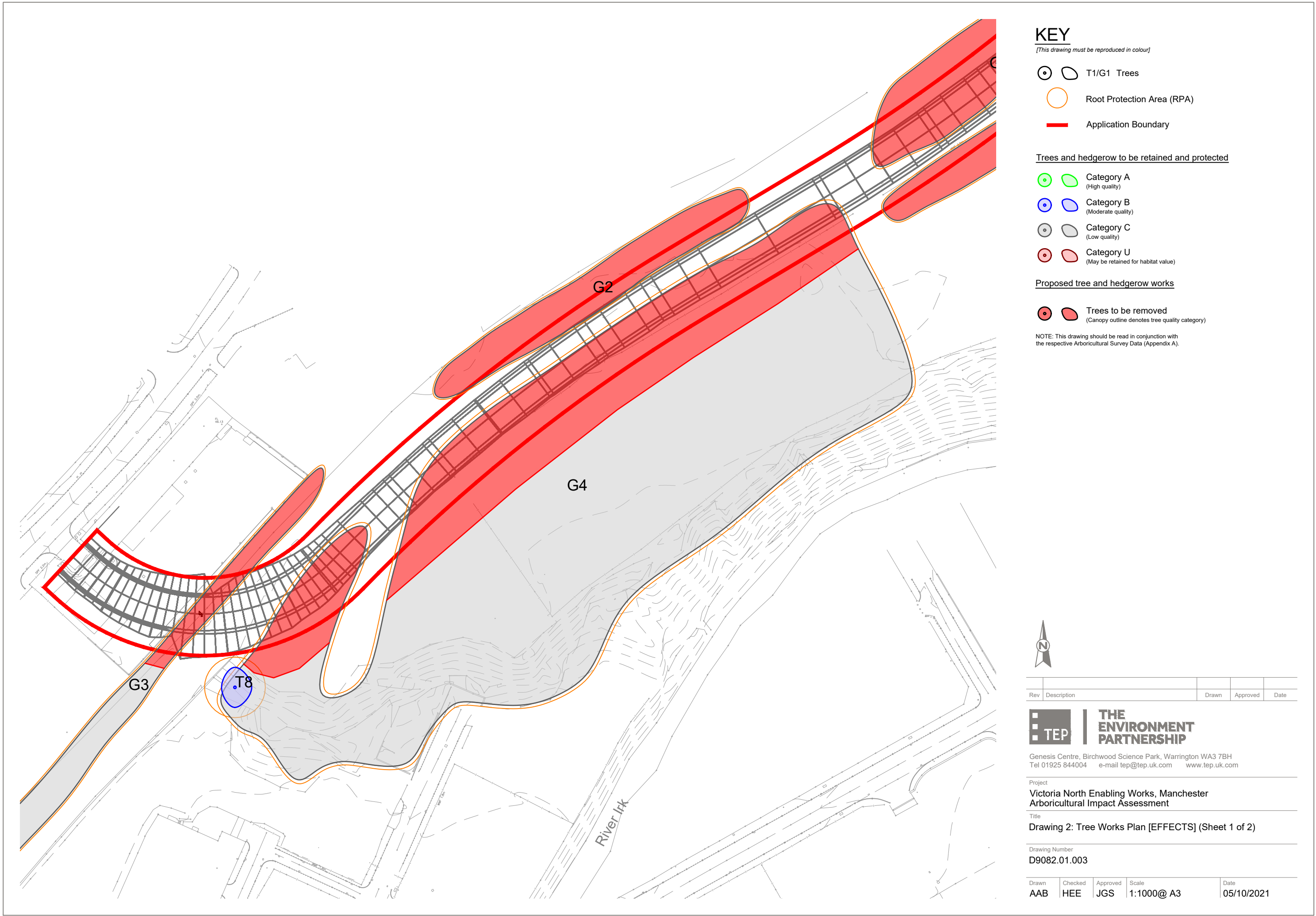


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Project
Victoria North Enabling Works, Manchester
Arboricultural Impact Assessment
Title
Drawing 1: Tree Constraints Plan [BASELINE] (Sheet 2 of 2)

Drawing Number
D9082.01.002

Drawn	Checked	Approved	Scale	Date
AAB	HEE	JGS	1:1000@ A3	05/10/2021



KEY

[This drawing must be reproduced in colour]

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

Trees and hedgerow to be retained and protected

- Category A (High quality)
- Category B (Moderate quality)
- Category C (Low quality)
- Category U (May be retained for habitat value)

Proposed tree and hedgerow works

- Trees to be removed (Canopy outline denotes tree quality category)

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



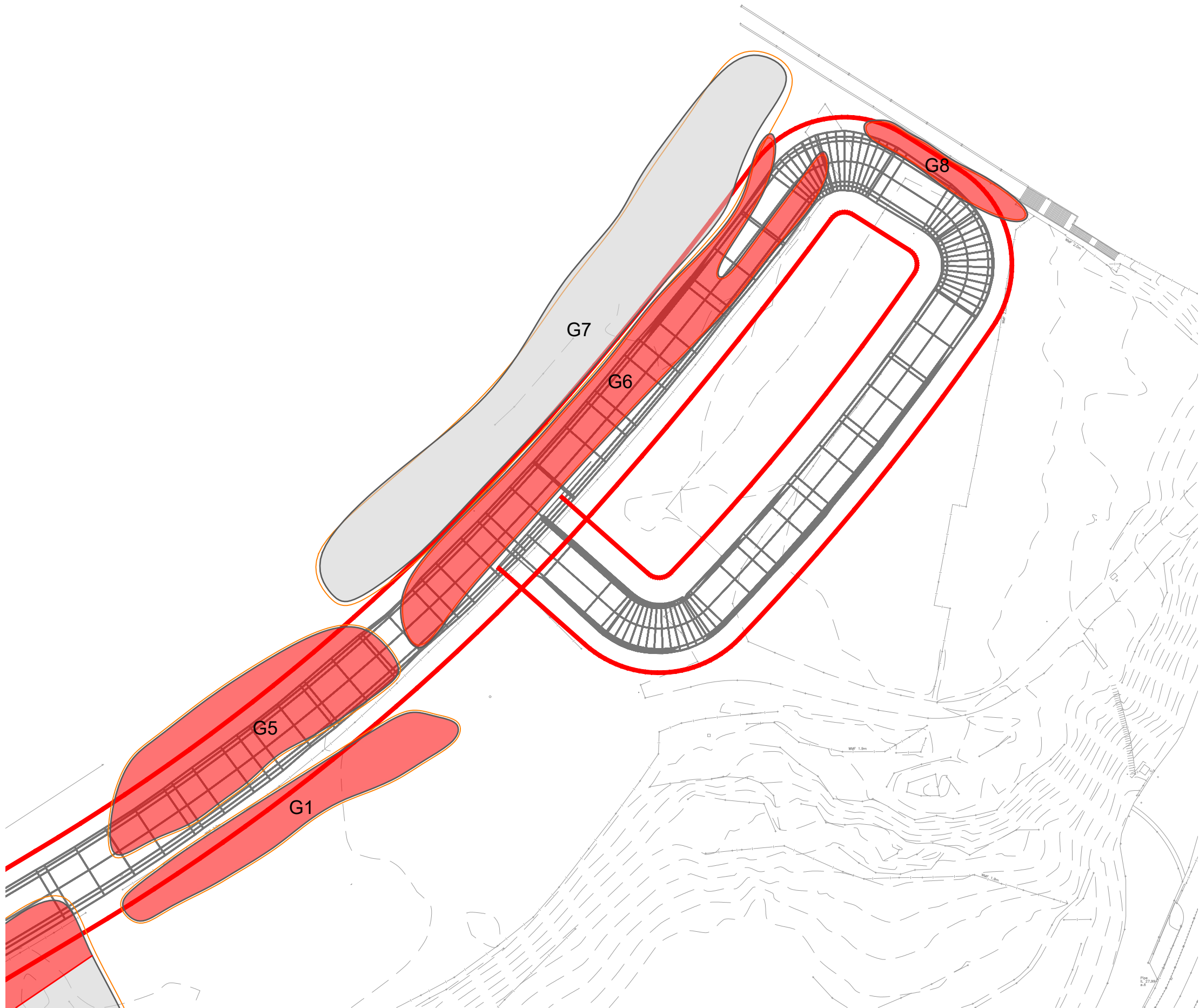
Rev	Description	Drawn	Approved	Date
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Project
Victoria North Enabling Works, Manchester
Arboricultural Impact Assessment
Title
Drawing 2: Tree Works Plan [EFFECTS] (Sheet 1 of 2)

Drawing Number D9082.01.003	Drawn AAB	Checked HEE	Approved JGS	Scale 1:1000@ A3	Date 05/10/2021
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KEY

[This drawing must be reproduced in colour]

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

Trees and hedgerow to be retained and protected

- Category A (High quality)
- Category B (Moderate quality)
- Category C (Low quality)
- Category U (May be retained for habitat value)

Proposed tree and hedgerow works

- Trees to be removed (Canopy outline denotes tree quality category)

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, Manchester Arboricultural Impact Assessment
Title
Drawing 2: Tree Works Plan [EFFECTS] (Sheet 2 of 2)

Drawing Number	D9082.01.004			
Drawn	Checked	Approved	Scale	Date
AAB	HEE	JGS	1:1000@ A3	05/10/2021



KEY

[This drawing must be reproduced in colour]

- T1/G1 Retained trees and groups
- Root Protection Area (RPA)
- Application Boundary
- Tree Protection Fencing (c. 374.5m)
(Must be installed prior to works commencement)

NOTE: It may be appropriate for site boundary fencing to act in lieu of specific Tree Protection Fencing where it aligns with that shown on this drawing



Rev	Description	Drawn	Approved	Date
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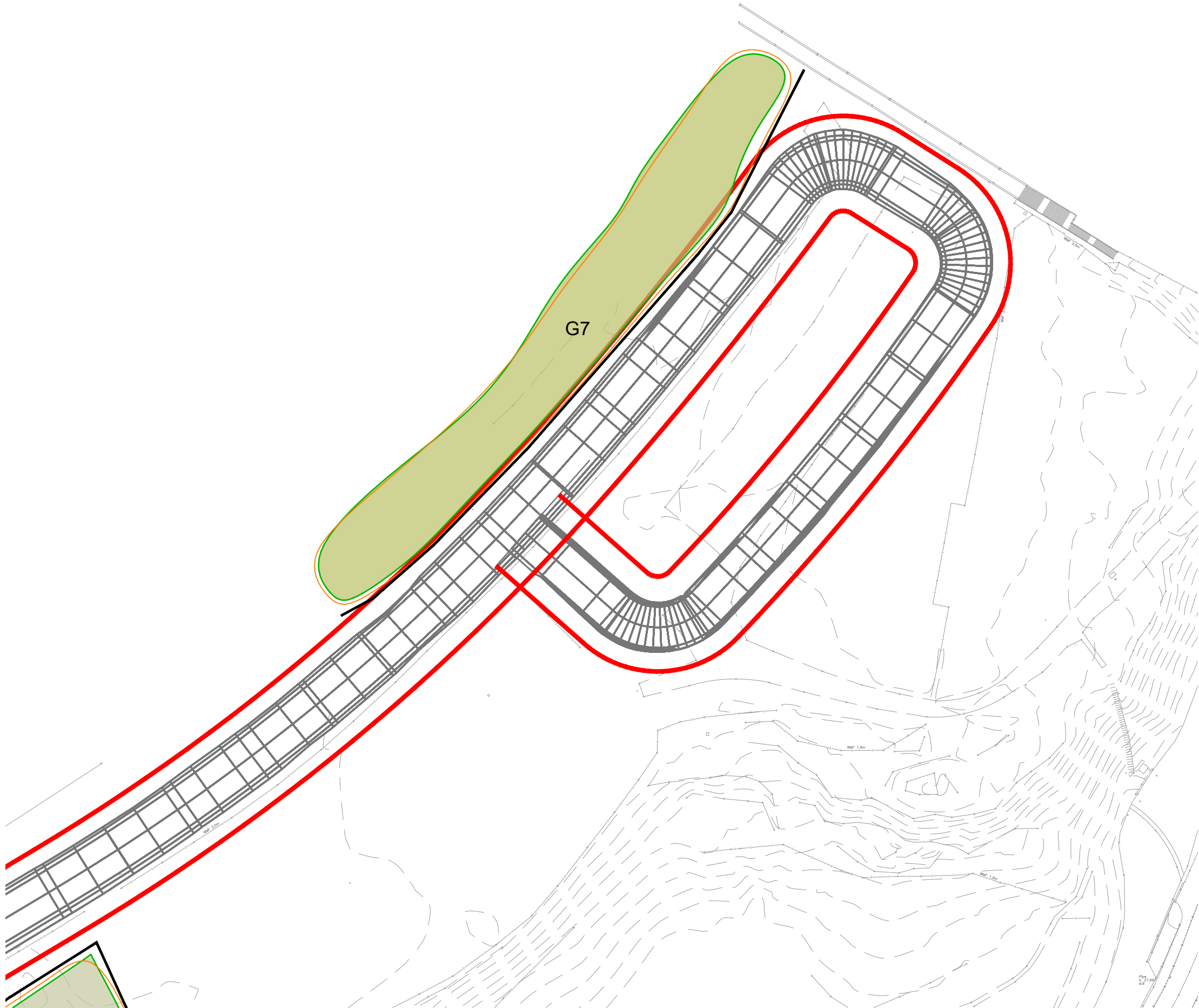
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Project
Victoria North Enabling Works, Manchester
Arboricultural Impact Assessment
Title
Drawing 3: Tree Protection Plan [EFFECTS] (Sheet 1 of 2)

Drawing Number
D9082.01.005

Drawn	Checked	Approved	Scale	Date
AAB	HEE	JGS	1:1000@ A3	05/10/2021



KEY

[This drawing must be reproduced in colour]

-   T1/G1 Retained trees and groups
-  Root Protection Area (RPA)
-  Application Boundary
-  Tree Protection Fencing (c. 374.5m)
(Must be installed prior to works commencement)

NOTE: It may be appropriate for site boundary fencing to act in lieu of specific Tree Protection Fencing where it aligns with that shown on this drawing



Rev	Description	Drawn	Approved	Date
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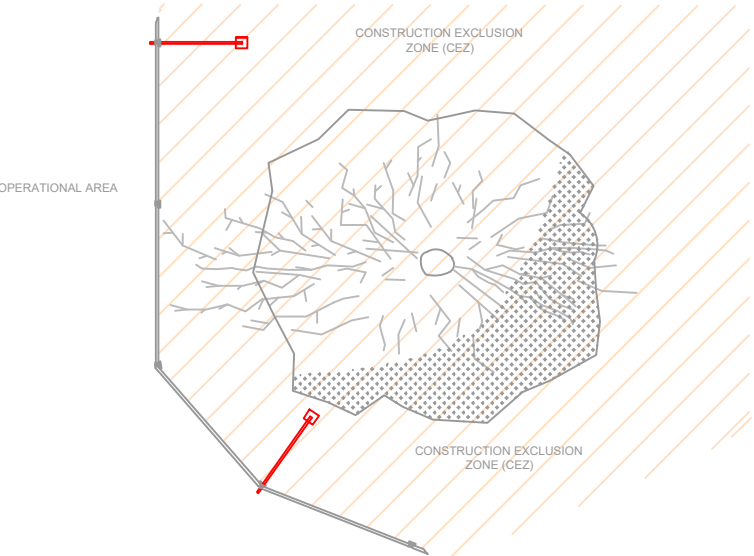
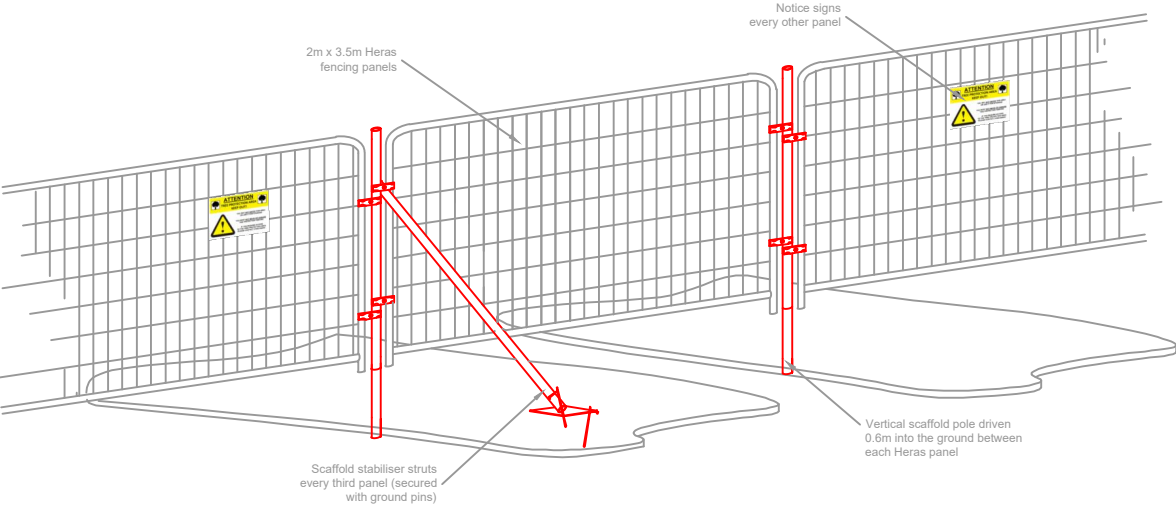
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Project
Victoria North Enabling Works, Manchester
Arboricultural Impact Assessment
Title
Drawing 3: Tree Protection Plan [EFFECTS] (Sheet 2 of 2)

Drawing Number
D9082.01.006

Drawn	Checked	Approved	Scale	Date
AAB	HEE	JGS	1:1000@ A3	05/10/2021

Tree Protection Fencing for use on soft surfaces

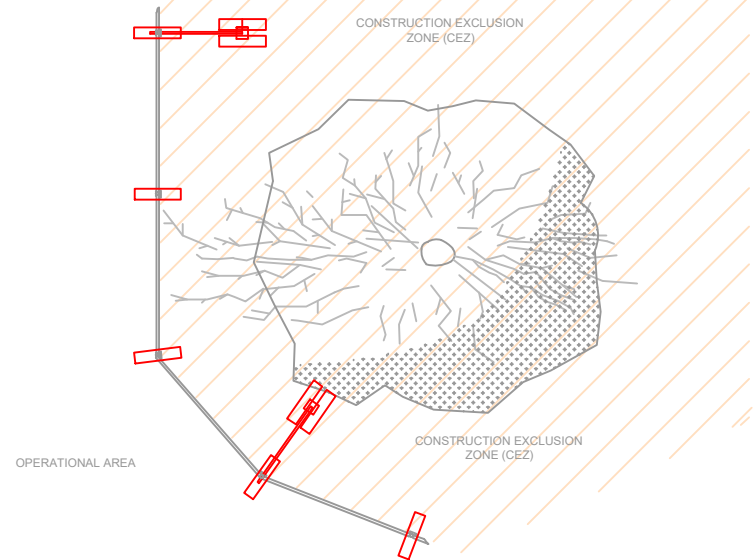
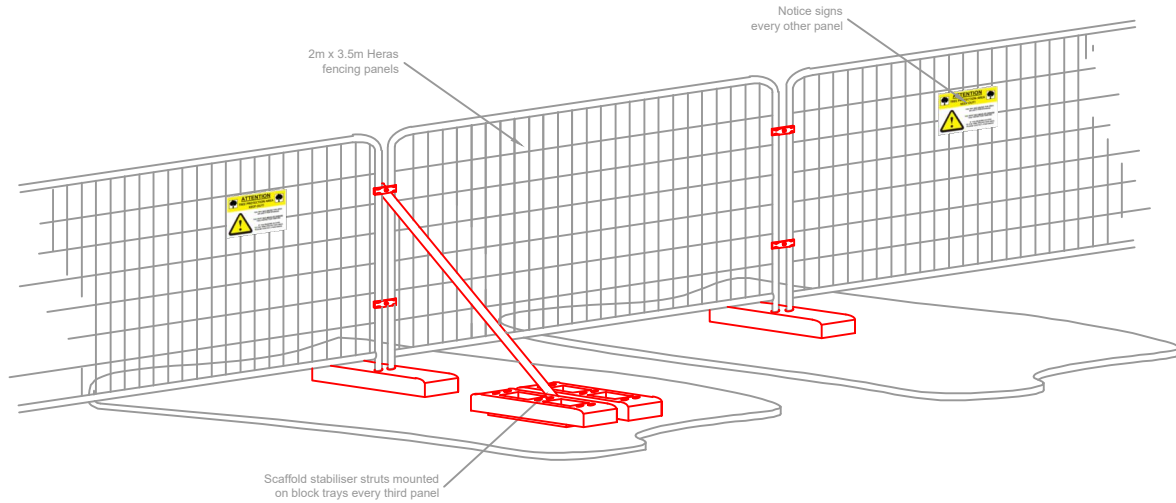


Per 3No. Heras panels (10.5m)

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
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TEP

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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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