



THE
ENVIRONMENT
PARTNERSHIP



ROCKINGHAM, HOYLAND BARNSELEY ARBORICULTURAL IMPACT ASSESSMENT

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Document Title	Arboricultural Impact Assessment
Prepared for	Harworth Estates Ltd
Prepared by	TEP - Warrington
Document Ref	7890.001

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Date	January
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Amendment History					
Version	Date	Modified by	Check / Approved by	Reason(s) issue	Status
0.1	24/10/19	TDP	JGS	Approval	Draft
1.0	16/12/19	TDP	JGS	Issue	Final

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Executive Summary

1. TEP has been commissioned by to conduct a survey of land at M1 J36, Hoyland and a review of designations, policies and other instruments of relevance to arboriculture. This report presents the results and effects of proposed development on trees.
2. 4 individual trees (T1–T4); 23 groups of trees (G1–G23); 11 woodland compartments (W1–W11); and 12 hedges (H1–H12) were recorded within influencing distance.
3. The tree population mainly comprises plantation woodland of a similar age and composition, which was established following the cessation of mining activity. It is not mature but in good condition and with emerging woodland characteristics. Broadleaved hedgerow and smaller stands of trees and scrub were also recorded.
4. The desktop review and site survey identified no Tree Preservation Orders; no trees within a Conservation Area; an ancient woodland within 20m on adjacent land; no veteran trees; and Habitats of Principal Importance including Deciduous Woodland and Hedgerow. The whole site is within a Community Forest.
5. The proposed development is for commercial units via a hybrid application. Whilst the location and detail of buildings would be a reserved matter, it is earthworks and access that would necessitate all of the tree removal. These would be determined in full detail. Therefore the removal of trees is not a reserved matter and would also be determined by this application.
6. Tree groups comprising approximately 0.6794ha; woodland compartments comprising approximately 12.2802ha; and 763m of hedgerow would be removed. None of these are outside the application boundary.
7. The development would give rise to adverse effects that cannot be mitigated within the application boundary. It would be possible to mitigate all adverse effects with a suitable scheme of off-site tree planting and management or by offsetting with other forms of biodiversity and habitat creation, according to local priorities.
8. A scheme of new planting is indicated on the masterplan and should be refined at reserved matters. Opportunities to establish woodland and mixed native hedgerow within the site should be maximised. However, the development would result in an inevitable net loss of tree cover within the application boundary.
9. Tree protection measures to be observed during construction are proposed in the form of a Tree Protection Plan. An Arboricultural Method Statement should be produced to give further detail on the creation of new woodland margins by felling, micro-siting of tree protection in these areas, and the construction process for ponds and earthworks, including adjacent to Short Wood.
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 to conduct an arboricultural survey of land close to Junction 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 hybrid 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 September 2018 and September 2019 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: *Hoyland/Rockingham Combined Topographical Survey 23757*). 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

Trees North of Dearne Valley Parkway

- 2.7 The site is mostly agricultural land and plantation woodland with a network of tracks and footpaths. It falls away from the road at the southern boundary towards the north. The tree cover is relatively well connected and comprises mostly native broadleaved species. Much of the tree cover is young or middle aged and has not yet reached its full potential. Without intervention, the quality and function of the trees will continue to improve; with good management, this could be accelerated.
- 2.8 Along the south-western boundary is a large area of plantation with a track and a hedge along the northern perimeter. The plantation comprises a wide range of broadleaved species and provides good screening from the road. Within the plantation, most species are developing well apart from alder, which is generally poor condition across the site.



Figure 2 View south-east of hedge H1 and plantation W1 screening the A6169

- 2.9 The best quality trees and arboreal habitats are in the north of the site and comprise an assemblage of plantation woodland, semi-natural woodland, scrub with rough grassland, mature hedges and ponds. Ancient woodland in the north-west of the survey area contains the oldest and best quality trees, which are mostly growing on a west-facing slope. The juxtaposition of different habitat types and the lack of grazing mean that an attractive and high quality semi-natural environment is developing in this area that should be conserved.



Figure 3 View north of a pond surrounded by G3, H2, G2 and ancient woodland W2

- 2.10 On the eastern edge of the pond at the margin of the ancient woodland there is a substantial stone retaining structure. Its function is unknown but it has the form of a retaining wall and culvert running along the edge of the woodland for a short way. It is in a state of collapse in places, with trees growing from the side of the wall. It may present a risk if pedestrian access to this area increases because it is not apparent from some angles and the drop is obscured by vegetation.
- 2.11 Plantation woodland connects to the ancient woodland and therefore has a valuable function in terms of habitat connectivity as well as landscape and screening functions. As with woodland elsewhere on the site, alder trees in the group have reduced vitality, possibly due to *Phytophthora*.



Figure 4 View north of footpath within western edge of G11

- 2.12 To the south of the site is a large commercial building. It is screened on its eastern side by trees. These are not fully mature and at present only screen about half of the building, depending on the viewpoint. However, over the next ten years, it is anticipated that they will increase in height and give improved screening.



Figure 5 Adjacent commercial building partly screened by trees in group G8

- 2.13 Along the northern perimeter of the commercial building, there is very young and recent hedge and tree planting and an established field boundary hedge. The planting lines a footpath and will, over time, give some screening but has limited value at present. The hedge is more mature and has some value, principally as a habitat and in terms of amenity for users of the footpath.



Figure 6 Footpath on boundary between hedge H4 and new planting G13 looking east

- 2.14 The remainder of the western part of the site contains very few trees apart from relatively small specimens that are within hedges. Most vegetation is confined to boundaries.

- 2.15 Across the site, oak, rowan, ash, birch, alder, grey willow, field maple, hazel, aspen, hawthorn, white poplar and osier are the most common species. In addition to the noted general decline of common alder, ash dieback disease was identified on common ash. The disease is widespread across the site and particularly affects small diameter trees, such as those in recent plantation. In general terms, it is not likely that ash dieback will present a significant risk because the majority of ash trees are relatively young. There may be larger individuals that die or become unsafe but these would be likely to be within the interior of woodland.



Figure 7 Symptoms of ash dieback on site

Trees South of Dearne Valley Parkway

- 2.16 The tree population is highly homogenous. The vast majority are within large compartments of young plantation woodland. These are very consistent in composition across the entire site with very little variation in size, density or species make up.
- 2.17 The plantation woodland is in three broad belts, which roughly follow the contours of the site. They include a wide range of broadleaved species and occasional pine. They are prominent within the landscape and have good potential to develop into woodland in the future but at present, contain very few trees of individual note.



Figure 8 Young plantation woodland adjacent to grazed fields, typical of the site

- 2.18 In addition to the plantation woodland that defines the treescape, there is an area of low density willow dominated scrub and small trees in the western corner of the site, close to an underpass beneath Dearne Valley Parkway.
- 2.19 A footpath runs along the western edge of the site from Dearne Valley Parkway to Church View and Tinker Lane in the south. It links to a track, which runs along the south-eastern edge of the site to Upper Hoyland Road in the north-east of the site. Both the footpath and the track are lined on both sides, and sometimes enclosed, by a mixture of plantation and hedgerow for most of their length.
- 2.20 Hedgerow on the site tends to be mixed broadleaved and some woodland margins have also been hedged by flailing as part of agricultural management. There is also a narrow belt of trees along the northern boundary alongside Dearne Valley Parkway. This has not been hedged and comprises relatively young and dense planting of broadleaved species which will increase significantly in size as the trees mature.



Figure 9 Small trees along Dearne Valley Parkway boundary

- 2.21 In the south of the site there is a small field parcel containing some scrub and small hawthorn trees. The footpath that runs along the western boundary is lined by a lapsed hedge which also contains some more mature individual hawthorn trees. These are mirrored by open grown hawthorn in the field opposite which contribute to the amenity of the footpath.

Tree Quality

- 2.22 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 be 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.	1.0771ha
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.	19.0620ha
C	Trees of low quality, typically with at least a short remaining life expectancy; unremarkable trees; young or small trees that could be replaced.	2.2590ha
U	Trees that cannot realistically be retained in the current land use for 10 years; with serious and irreparable defects, pathogens or decline.	None

- 2.23 Most trees are moderate quality, although this is principally a reflection of the size of woodland compartments, the collective visual amenity of large and well-connected areas of tree cover, and the existing and developing habitat value.



Figure 10 Small trees and rough ground within southern field; larger sycamore T3 in background

- 2.24 There is one high quality tree (a mature hawthorn) in the south of the site. A relatively small proportion of trees are of low quality; this is principally due to small size rather than any inherent defects or shortcomings.

³ Refer to Appendix B for the full table

Root Protection Areas

- 2.25 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.
- 2.26 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 minimal. There is likely to be some localised constraint to root spread around a pond and drainage channel within G5, although these trees are very small. Trees on sloping ground tend to have a rooting bias to the uphill side.

Policy, designations and protection

Planning Policy

- 2.27 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.
- 2.28 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

- 2.29 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.
- 2.30 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.
- 2.31 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.
- 2.32 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.

⁴ Refer to Appendix A for RPA area calculations

⁵ See Drawing 1 for RPA shapes

⁶ NPPF paragraph 8 (c)

⁷ NPPF paragraph 170 (b) (d)

⁸ NPPF paragraph 175 (a)

⁹ NPPF paragraph 175 (c)

Local Planning Policy

- 2.33 Barnsley Metropolitan Borough Council has a number of adopted policies pertaining to trees and nature conservation in the Local Plan (adopted January 2019). They are reproduced hereafter.

Green Space Policy GS1

We will work with partners to improve existing green space to meet the standards in our Green Space Strategy.

Green Spaces are green open areas which are valuable for amenity, recreation, wildlife or biodiversity and include types such as village greens, local open spaces, country parks, formal gardens, cemeteries, allotments, woodlands, recreation grounds, sports pitches and parks.

Proposals that result in the loss of green space, or land that was last used as green space, will not normally be allowed unless:

- (i) An assessment shows that there is too much of that particular type of green space in the area which it serves and its loss would not affect the existing and potential green space needs of the borough; or
- (ii) The proposal is for small scale facilities needed to support or improve the proper function of the green space; or
- (iii) An appropriate replacement green space of equivalent or improved quality, quantity and accessibility is provided which would outweigh the loss.

In order to improve the quantity, quality and value of green space provision we will require qualifying new residential developments to provide or contribute towards green space in line with the standards set out in the Green Space Strategy and in accordance with the requirements of the Infrastructure and Planning Obligations Policy. The Supplementary Planning Document 'Open Space Provision on New Housing Developments' offers guidance to developers on what will be expected in terms of open space provision in order to achieve those standards.

Where there is a requirement to provide new green space an assessment will be carried out to determine the most appropriate provision, taking into account site characteristics and constraints. In cases where it is deemed unsuitable to make provision for open space within or adjacent to a development site, suitable off-site open space facilities may be acceptable either as new facilities or improvements to those existing. Where appropriate new green space should secure access to adjacent areas of countryside.

Green Ways and Public Rights of Way Policy GS2

[The following policy applies to a section of track on the eastern boundary adjacent to hedgerow H4 and woodland W7.]

We will protect Green Ways and Public Rights of Way from development that may affect their character or function.

Where development affects an existing Green Way or Public Right of Way it must:

- (i) Protect the existing route within the development; or
- (ii) Include an equally convenient and attractive alternative route.

Where new development is close to a Green Way or Public Right of Way it may be required to:

- (iii) Provide a link to the existing route; and/or
- (iv) Improve an existing route; and/or
- (v) Contribute to a new route.

In some cases, we will ask developers to make a financial contribution to meet these requirements in accordance with the Infrastructure and Planning Obligations Policy.

Green Infrastructure Policy GI1

We will protect, maintain, enhance and create an integrated network of connected and multi-functional Green Infrastructure assets that:

- (i) Provides attractive environments where people want to live, work, learn, play, visit and invest
- (ii) Meets the environmental, social and economic needs of communities across the borough and the wider City Regions
- (iii) Enhances the quality of life for present and future residents and visitors
- (iv) Helps to meet the challenge of climate change
- (v) Enhances biodiversity and landscape character
- (vi) Improves opportunities for recreation and tourism
- (vii) Respects local distinctiveness and historical and cultural heritage
- (viii) Maximises potential economic and social benefits
- (ix) Secures and improves linkages between green and blue spaces

At a strategic level Barnsley's Green Infrastructure network includes the following corridors which are shown on the Green Infrastructure Diagram 5:

- (i) River Dearne Valley Corridor
- (ii) River Dove Valley Corridor
- (iii) River Don Valley Corridor
- (iv) Dearne Valley Green Heart Corridor
- (v) Historic Landscape Corridor

The network of Green Infrastructure will be secured by protecting open space, creating new open spaces as part of new development, and by using developer contributions to create and improve Green Infrastructure.

We have produced a Green Infrastructure Strategy for Barnsley which is informed by the Leeds City Region and South Yorkshire Green Infrastructure Strategies.

Biodiversity or Geological Policy BIO1

Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:

- (i) Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan
- (ii) Maximising biodiversity and geodiversity opportunities in and around new developments
- (iii) Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors
- (iv) Protecting ancient and veteran trees where identified
- (v) Encouraging provision of biodiversity enhancements

Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

Development which adversely effects a European Site will not be permitted unless there is no alternative option and imperative reasons of overriding public interest (IROPI). Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.

Dearne Valley Green Heart Nature Improvement Area

[The whole site falls within this policy area, which is described at paragraph 17.25 in the Local Plan (BIO1) as one of the key ecological assets for Barnsley.]

Area where a local partnership has a shared vision for their natural environment.

The key ecological assets for Barnsley include:

- (i) Peak District Moors (South Pennine Moors) is designated as a Special Protection Area for birds (these sites are also nationally important as SSSIs and also identified as Local Wildlife Sites for their local importance)
- (ii) South Pennine Moors is designated as Special Area of Conservation for its habitats and supporting species, which are rare in a European context

- (iii) 7 Sites of Special Scientific Interest (SSSI)
- (iv) Over 100 Ancient Woodlands that have had continuous woodland cover since at least 1600AD
- (v) 57 Local Wildlife Sites
- (vi) 6 Local Nature Reserves
- (vii) 30 Regionally Important Geological and Geomorphological Sites
- (viii) A number of protected species including the otter, water vole, great crested newt and bat species
- (ix) At least 20 UK Biodiversity Action Plan / Section 41 (NERC Act, 2006) priority habitats / habitats of principal importance
- (x) Dearne Valley Green Heart Nature Improvement Area (NIA)

These biodiversity and geological sites will be shown on the Policies Map that accompanies the Local Plan.

Supplementary Planning Guidance

- 2.34 The Local Plan includes a supplementary planning document covering Trees and Hedgerow¹⁰ and one covering Biodiversity and Geodiversity¹¹, both of which were adopted in May 2019.
- 2.35 The Trees and Hedgerow SPD supports policy BIO1 and expands on the submission of information to the planning process. The Council considers that trees and hedgerows enhance the quality of the environment, including that of new developments, and should be retained and protected wherever possible.
- 2.36 It advises that higher retention category trees and hedgerows should be retained, both in the short and long term; that no building works will be allowed within the root protection area of any retained tree; and that intervening distances must be adequate to ensure that future occupants will not feel unduly threatened in high winds.
- 2.37 Of particular relevance to this site, the Biodiversity and Geodiversity SPD states that within the Nature Improvement Area the council will require specific biodiversity enhancements with developments over and above the minimum mitigation and compensation measures. Developments of a scale that can deliver quantifiable benefits will be subject to the SPD. Such benefits could, for example, include new woodland or improving the management of existing habitats.

Tree Preservation Orders

- 2.38 A check with the local authority was undertaken on 24th October 2019. The online mapping system confirmed that no trees within and/or adjacent to the site are protected by Tree Preservation Order.

¹⁰ <https://www.barnsley.gov.uk/media/10942/trees-and-hedgrows-spd.pdf>

¹¹ <https://www.barnsley.gov.uk/media/10929/biodiversity-and-geodiversity-spd.pdf>

Conservation Areas

- 2.39 A check with the local authority was undertaken on 24th October 2019. The online mapping system confirmed that no trees within and/or adjacent to the site are within a Conservation Area.

Ancient Woodland

- 2.40 Ancient Woodland is defined in England as any area that has been wooded continuously since at least 1600 AD; it is regarded as 'irreplaceable'¹². 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.
- 2.41 Natural England's ancient woodland inventory¹³ an area of ancient semi-natural woodland (Short Wood) within or adjacent to the site to the north. The inventory is provisional and may not show woodland smaller than 2ha. It is therefore possible that unmapped ancient woodland exists. The survey did not identify any additional areas with the composition or characteristics of ancient woodland.
- 2.42 Short Wood is broadly contiguous with the north-western part of W11 and is not within or immediately adjacent to the proposed development site. At the closest point, the ancient woodland is at least 40m from the application boundary.

Veteran Trees

- 2.43 NPPF defines veteran trees are those which, because of age, size and condition, are of exceptional biodiversity, cultural or heritage value¹⁴. 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'.
- 2.44 There is no comprehensive national register of veteran trees. The Woodland Trust maintains an inventory of significant trees which includes some ancient and veteran individuals¹⁵. At the time of writing it contained no records of relevance to the site.
- 2.45 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.

Community Forests

- 2.46 Online mapping¹⁶ confirmed that the site is within the South Yorkshire Community Forest.
- 2.47 An approved Community Forest Plan may be a material consideration in preparing development plans and in deciding planning applications. However, the significance of the community forest designation in this case is probably limited to nominal inclusion within the wider Northern Forest initiative rather than by any policy or plans of the community forest itself, which is defunct as of 2016.

¹² NPPF Annex 2: Glossary (p.67)

¹³ <http://www.natureonthemap.naturalengland.org.uk/magicmap.aspx>

¹⁴ NPPF Annex 2: Glossary (p. 64)

¹⁵ <https://ati.woodlandtrust.org.uk/>

¹⁶ <https://magic.defra.gov.uk/>

- 2.48 The Northern Forest is an environmental counterpart to the Northern Powerhouse strategy and delivery is coordinated by the Woodland Trust. Broadly, its aim is to treble tree cover in the region and it may present a vehicle for off-site tree planting if necessary.

Habitats of Principal Importance

- 2.49 A list¹⁷ of habitats which are of principal importance for the purpose of conserving biodiversity is maintained by the Secretary of State¹⁸. 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 Inventory¹⁹. Observations were also made to corroborate the mapping during the site survey.
- 2.50 All public authorities, including local planning authorities and statutory undertakers have a duty to have regard to the purpose of conserving biodiversity²⁰. 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

- 2.51 Six distinct types of woodland²¹ are amalgamated in the Inventory under the habitat type 'Deciduous Woodland'.
- 2.52 Short Wood (ancient woodland) (W11) is the only mapped Deciduous Woodland on the site.
- 2.53 Other woodland survey features are not mapped as Deciduous Woodland but observations made during field work suggest that some might be regarded as such, particularly *lowland mixed deciduous woodland*. They contain a large diversity of woody species as well as emerging woodland structure. No NVC classification has been undertaken to confirm the extents of the current mapping.

*Wood Pasture and Parkland*²²

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

*Traditional Orchards*²³

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

¹⁷ <http://jncc.defra.gov.uk/page-5706>

¹⁸ Natural Environment and Rural Communities Act 2006, 41 (1)

¹⁹ <https://magic.defra.gov.uk/MagicMap.aspx>

²⁰ Natural Environment and Rural Communities Act 2006, 40 (1)

²¹ Upland Oakwood; Lowland Beech and Yew Woodland; Upland Mixed Ashwoods; Wet Woodland; Lowland Mixed Deciduous Woodland; Upland Birchwoods

²² http://jncc.defra.gov.uk/docs/UKBAP_BAPHabitats-65-WoodPastureParkland2011.doc

²³ http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-56-TraditionalOrchards.doc

Hedgerow²⁴

- 2.56 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.
- 2.57 The survey identified 12 hedgerows²⁵. Of these, all except H10 meet the description of the Habitat of Principal Importance. H10 is newly planted.

Other Designations and Status

- 2.58 The site is within the Dearne Valley Nature Improvement Area.
- 2.59 Short Wood is also locally designated as a Biodiversity or Geological Interest Site.

Protected Species

- 2.60 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.
- 2.61 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

- 2.62 Intentional harm to a wild bird, egg, or a nest that is in use or being built is an offence²⁶. 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 offence²⁷.
- 2.63 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.
- 2.64 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.

²⁴ http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-17-Hedgerows.doc

²⁵ See Appendix A

²⁶ Wildlife and Countryside Act 1981, 1 (1)

²⁷ Wildlife and Countryside Act 1981, 1 (5)

Bats

- 2.65 It is an offence to damage, destroy or obstruct access to any structure or place which is used for shelter or protection²⁸, or breeding or resting²⁹ by a bat. Mature trees often contain cavities, splits and ivy, which may be attractive to bats.
- 2.66 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.

²⁸ Wildlife and Countryside Act 1981, 9 (4)

²⁹ 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 11 commercial units of varying sizes with HGV access from a new roundabout on Dearne Valley Parkway. The existing topography would be re-profiled to create large flat developable plots. Car parking, attenuation ponds, pedestrian links and landscaping would also be incorporated.
- 3.3 The proposed development is via a hybrid application, in which earthworks and access would be detailed. The removal of trees presented in this report is a function of earthworks and access rather than the later design and arrangement of buildings. Therefore, the tree removal presented in this report would all be determined in full. No further tree removal is anticipated, although this may be reviewed at reserved matters.
- 3.4 The proposed layout is shown on Tree Works and Tree Removal Plans and is based on the proposed masterplan *12006-1-110B-111B-112B-113A-114A Proposed_2500_A1* provided by The Harris Partnership.
- 3.5 Cut and fill plans (4652-2-JPG-SW-00-DR-C-1201-S2-P05 and 4652-2-JPG-SW-00-DR-C-1203-S2-P02) were also available to inform the production of this assessment.

Tree Removal

- 3.6 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.
- 3.7 In total, 0 individual trees; tree groups comprising approximately 0.6794ha; woodland compartments comprising approximately 12.2802ha; and 763m of hedgerow would be removed.

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

	Trees	Groups	Woodland	Hedgerow
Remove (on-site)	-	G2, (G6), (G8), G23	(W1), (W2), W3, (W4), W5, (W7), W8, (W10)	(H2), H7
Remove (off-site)	-	-	-	-

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

- 3.8 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.
- 3.9 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	2
Groups	0	1	3	0	
Woodland	0	7	1	0	
Total loss	0ha	12.5895ha	0.3701ha	0ha	763m
Proportion of existing	0%	66%	16%	0%	30%

- 3.10 The proposed development would necessitate the removal of almost all trees within the application boundary. The totals above describe a somewhat smaller proportion because they include trees that were surveyed but which are outside the application boundary.
- 3.11 Most of the tree removal is a function of topography. The site slopes, in some places steeply. In order to develop the site for the proposed type of use, it would be necessary to remodel the vast majority of the site to create level development plots and vehicle access at acceptable gradients for HGV use.
- 3.12 Significant cut and fill redistribution would be undertaken within the development footprint. Levels north of Dearne Valley Parkway would change by between -4.93 and +7.49m; levels south of Dearne Valley Parkway would change by between -7.63 and +8.32m. This magnitude of level change makes tree retention impossible except in areas which would remain undeveloped.

Policy compliance and effects on designated or protected features

Planning Policy

National Planning Policy Framework³⁰

- 3.13 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.
- 3.14 The proposed development would initially adversely affect natural capital and ecosystem services, including those provided by trees and woodland because almost all would be removed. The existing trees are mostly within maturing plantation woodland and therefore have not yet peaked in terms of natural capital or ecosystem service provision. Offsetting impacts by the creation of broadly equivalent habitat types would lead to a delay in the delivery of maximum benefit as new trees mature. It may be possible to offset this effect by increasing the provision of new planting off-site, or by planting degraded sites or those of low quality.

Local Planning Policy

- 3.15 Evaluation of compliance with local policy will be for the LPA to determine. In broad terms, compliance with GI1 and BIO1 are likely to require that the quantity, quality and prospects of woodland are not diminished by the development. Most of the trees that would be removed under the proposals are emerging woodland that were planted as part of restoration following the cessation of mining activity. They are not mature but policies pertaining to woodland clearly apply. The extant condition, design intention and future prospects of almost all of the site's larger areas of tree cover can be regarded as woodland for the purposes of policy interpretation because they are semi-natural, regenerating and with emerging woodland characteristics that will continue to develop without intervention.

Ancient Woodland

- 3.16 The proposed development would not result in loss of ancient woodland.
- 3.17 The proposed development would not result in deterioration of ancient woodland.
- 3.18 The development would be adjacent to woodland of which a part is ancient woodland. The part of Short Wood that is mapped as ancient is at least 40m from the site boundary, which is more than the recommended minimum 15m buffer around ancient woodland. Development at a distance of 40m may nonetheless harm ancient woodland if it is inappropriate or not completed with sensitivity.
- 3.19 The development in the north-west corner of the site (adjacent to Short Wood) comprises a large attenuation pond. This is inherently well-suited to the woodland margin location because it would not introduce lighting, hard surfaces, noise or large structures and would exclude most human activity. The risk of harm to the ancient woodland would arise only during construction, which can be mitigated entirely by following appropriate design and construction methodologies.

³⁰ See sections below for effects on Ancient Woodland, Veteran Trees and Community Forests

- 3.20 In order to construct the pond it will be necessary to re-profile the landform within the site. Tree planting is also proposed along the site boundary as a buffer to augment the woodland. Both of these activities should be covered by a detailed Arboricultural Method Statement and a watching brief.

Community Forest

- 3.21 The proposed development would result in a net reduction in existing tree canopy cover within a Community Forest. Off-site planting to delivery biodiversity net gain could also offset any reduction in canopy cover, which could be secured by planning condition.

Habitats of Principal Importance

- 3.22 Loss of or harm to a Habitat of Principal Importance, without mitigation, constitutes an adverse effect that is likely to be regarded by the consenting authority as contrary to its duty to conserve biodiversity.

Deciduous Woodland

- 3.23 The proposed development would result in loss of Deciduous Woodland.
- 3.24 Short Wood is the only mapped deciduous woodland but this is thought to reflect the relatively recent planting of the majority of trees on the site. Most of the larger groups of trees should be regarded as emerging woodland and capable of meeting the habitat description.

Hedgerow

- 3.25 The proposed development would result in loss of Hedgerow.
- 3.26 There are opportunities within the masterplan for new hedgerow planting. It is unlikely that the context and margins of new hedgerows would be equivalent to the existing hedgerow because of the change in land use and management. However, this would not necessarily be an adverse change.

4.0 Mitigation

- 4.1 This section describes opportunities to mitigate 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 defined in the preceding sections. Within it Column 1 describes the outcome without mitigation; Column 2 reflects whether any mitigation is secured within the current application; Column 3 represents a judgement regarding whether predicted effects are, or could be, neutral or positive; and Column 4 defines the current position 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	No	Negative
Tree condition ³¹	Yes	Yes	Yes	Pending
National Policy ³²	Yes	Yes	No	Negative
Local Policy	Yes	Yes	No	Negative
Ancient Woodland	Yes	Yes	Yes	Pending
Veteran Trees	No			
Deciduous Woodland	Yes	Yes	No	Negative
Wood Pasture and Parkland	No			
Traditional Orchard	No			
Hedgerow	Yes	No	Yes	Pending

- 4.3 Table 7 is based on the application boundary and mitigation which is detailed at this time. If additional mitigation is delivered off-site then its conclusions may change.

³¹ In this context, whether harm might occur to existing trees during development (without protection measures)

³² In this context, protection and enhancement of arboreal biodiversity and ecosystem services

- 4.4 **Positive** residual effects represent benefits that would be delivered by the proposed development.
- 4.5 **Neutral**³³ residual effects are those that should have no weight in decision making.
- 4.6 **Negative** residual effects cannot be mitigated and represent adverse effects of the proposed development. However, they may be acceptable in the planning balance on consideration of other benefits delivered by the proposed development.
- 4.7 **Pending** residual effects are those for which mitigation can be secured after consent has been granted, typically by planning condition. It is assumed by this report that they would be.

Proposed measures

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

Layout

- 4.9 The retention of trees that is facilitated within the proposed layout would be observed by the developer and all appointed contractors; tree removal would be limited to that illustrated on Drawings 4-7.

Tree Protection

- 4.10 Tree Protection Plans are provided at Drawings 8-12. They show 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.
- 4.11 Tree protection measures will follow the specification provided at Drawing 13.
- 4.12 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

- 4.13 New planting is indicated on the Proposed Masterplan. The final detail of new planting would be subject to later determination.
- 4.14 The total area of soft landscaping within the site that would be theoretically available for tree planting is c.11.8ha. This includes verge space and soft landscaping around buildings so it is likely that the final scheme would include less tree canopy cover and/or that some of this area could not be counted towards offsetting for loss of woodland. There are also other local priorities that may influence the mix of habitat types in any final design.
- 4.15 The illustrated planting comprises fewer trees than would be removed. There would therefore be a net reduction in tree cover within the site.

³³ Including negligible and non-material effects

- 4.16 The existing plantation is species rich, albeit not mature woodland. Any new planting scheme could include a greater range of species than are present but not significantly, Biodiversity in this respect would not be substantially enhanced, although structural diversity and better management of plantation could ultimately lead to better quality habitats and therefore biodiversity of other woodland species such as ground flora, lichens, mosses, invertebrates and birds.
- 4.17 The average mature size of tree species on the site would be reduced by the proposed development and planting scheme. The existing trees are mostly natives with large mature size. A proportion of new trees would be smaller ornamental species, particularly in areas of hard landscaping and amenity planting.
- 4.18 The distribution and connectivity of tree cover would be reduced by the proposed development and planting scheme. In particular an existing belt of trees that bisect the site would be removed and not replaced, and new points of vehicle access will introduce gaps into existing tree belts.

Tree works

- 4.19 The works recommended in Appendix A³⁴ would be undertaken by a qualified contractor in accordance with British Standard 3998:2010 Tree work – Recommendations.

Recommended measures

- 4.20 The following measures should be secured by planning condition or other agreement:

Arboricultural Method Statement

- 4.21 Tree Protection Measures and construction methods to prevent harm to retained trees in accordance with BS5837:2012 should be detailed within an Arboricultural Method Statement prior to commencement of development.
- 4.22 The scope of the Arboricultural Method Statement and the locations of activities that cannot be completed without it are illustrated on the Tree Protection Plans at Drawing 8 to 12. They include the establishment of new woodland edges by selective tree thinning and removal under a watching brief and micro-siting of protection measures. The method statement should also detail an independent and auditable schedule of arboricultural monitoring and reporting during construction. Finally, it should include detailed drawings showing the interface between the development and Short Wood to demonstrate how adverse effects on ancient woodland will be avoided throughout construction of the adjacent pond and earthworks.

Level change, utilities and drainage

- 4.23 There should be no level change, or installation of buried utilities or drainage within any Root Protection Area³⁵ unless it can be demonstrated within the AMS that this will be done without deterioration in tree condition.

³⁴ Other than those relating to trees that would be removed

³⁵ As per Drawing 2

Planting

- 4.24 A detailed scheme of tree planting should be produced and implemented, in broad accordance with the masterplan. It should include:
- (i) As much tree planting in the form of semi-natural and species rich woodland as can be appropriately accommodated within the layout and other biodiversity objectives;
 - (ii) Mixed native and broadleaved hedgerow planting along internal boundaries, such as around car parks and footpaths;
 - (iii) Understorey planting to augment all retained tree groups by introducing additional native species and to improving group age structure;
 - (iv) Specimen trees with a large mature size in prominent locations such as on the proposed roundabout and along access routes.
- 4.25 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.

Tree and woodland management

- 4.26 A plan for the management of all retained trees and new planting should be produced and implemented. The plan should cover for a period of 40 years and should include:
- (i) Measures to support and/or accelerate the development of a semi-natural woodland composition;
 - (ii) Risk management;
 - (iii) Measures to maximise arboreal biodiversity;
 - (iv) Measures to establish and maintain resilient visual screening functions along the public highway and around large buildings.

Off-site mitigation

- 4.27 Within the application boundary. It will not be possible to deliver the proposed development without a loss of tree cover and associated benefits. However, the development would not give rise to any adverse effects that cannot be mitigated. If such adverse effects are deemed to be unacceptable in the planning balance, a scheme of off-site mitigation should be developed.
- 4.28 Off-site mitigation should include:
- (i) Sufficient tree planting to deliver a net gain of tree cover and associated benefits within the borough within and secured for 40 years; or
 - (ii) Tree planting as part of a scheme delivering biodiversity gains across but focussing on a broader range of habitat priorities; and
 - (iii) Measures to enhance the connectivity of existing woodland or trees.

APPENDIX A: Arboricultural Survey Data

APPENDIX A: Arboricultural Survey Data Sheets



Surveyor Tom Popplewell
Date 18th September 2018 (North site) and 27th September 2019 (South sites)
Town Barnsley
Site Rockingham 2 and 3
Dwg Ref D7890.001

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
Trees																			
T1	Common ash	14.0	588	6.0	9.0	8.0	6.0	6.0	2.0	S	Middle Age	Good	The only substantial individual tree in survey; multi-stemmed from the base; adjacent to wet area/small pond; canopy almost to ground and overhanging path; crown condition still good although ash dieback widespread in area so estimated remaining life expectancy reduced	B,1,2	7.1	156.3	Monitor annually for decline that may present a risk to the path and pumping station	Medium	N
T2	Common hawthorn	7.0	449	4.0	4.0	4.0	3.0	4.0	2.5	S	Mature	Good	Fine mature specimen tree; large for species; on end of row punctuating footpath junction visually opposite allotment/garages; minor stem wounding; full domed canopy almost to ground	A,1	5.4	91.1	Thin 20% in closed canopy areas	Long	N
T3	Sycamore	16.0	550	1.0	6.0	6.0	6.0	6.0	3.5		Middle Age	Fair	Area not accessible, tree surveyed at distance; canopy appears healthy; prominent tree with balanced form at end of residential street	B,1	6.6	136.8	Inspect base of tree	Long	N
T4	Goat willow	6.0	237	10.0					0.0		Middle Age	Good	Basally multistemmed tree	C,1	2.8	25.4		Long	N
Groups																			
G1	Blackthorn, Common dogwood, Dog rose, Willow species	2 to 7	75 to 150	100.0					0.0		Young to Middle Age	Fair	Screening adjacent to highway; shrubby with short row of willow trees at western end	C,2,3	Refer to Drawing	n/a	Group could be hedged	Long	N
G2	Common ash, Common hazel, Downy birch, Field maple, Goat willow, Grey willow, Pedunculate oak, Rowan, Silver birch	2 to 8	75 to 180	800.0					1.5		Young to Middle Age	Good	Dense plantation, dominated by willow and birch but with other broadleaved species less commonly throughout	C,2	Refer to Drawing	n/a	Thin 20%	Long	N
G3	Common ash, Common hawthorn, Common hazel, Downy birch, Field maple, Goat willow, Grey willow	2 to 11	75 to 230	200.0					0.0		Young to Middle Age	Good	Linear continuation of mixed broadleaved plantation W1 but thinner and with occasional gaps; has screening function and provides a habitat link along the roadside; internal ditch and fences make access difficult in places; slopes down to highway; tallest trees at north-eastern end	C,2,3	Refer to Drawing	n/a		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G4	Common ash, Common hawthorn, Common hazel, Common privet, Elder, Willow species, Wych elm	3 to 8	75 to 350	50.0					0.0		Middle Age to Mature	Good	Row of early mature hawthorn and mature open grown hawthorn in field opposite, either side of path; also small dead trees and scrubby boundary vegetation and lapsed hedge; collectively forming a screen close to a pumping station for residential properties on Rockingham Street and Tinker Lane; group gets smaller to south; includes occasional large and mature elder in typical condition; overhead telephone wire	B,2,3	Refer to Drawing	n/a		Long	N
G5	Common alder, Common hawthorn, Downy birch, Goat willow, Grey willow, Silver birch	1.5 to 6	75 to 270	200.0					0.0		Young to Middle Age	Good	Scattered self-set trees, dominated by willow and birch; many multi-stemmed; surrounded by rough ground and forming a matrix of shelter and shade at the woodland margin; no individual trees of note; pond and piles of aggregate in area	C,3	Refer to Drawing	n/a		Long	N
G6	Blackthorn, Common dogwood, Common hawthorn, Dog rose	2 to 7	75 to 150	100.0					0.0		Young to Middle Age	Fair	Screening adjacent to highway; shrubby and connected to larger woodland at north-eastern end	C,2,3	Refer to Drawing	n/a	Group could be hedged	Long	N
G7	Bird cherry, Common hawthorn, Goat willow, Grey willow, Silver birch	7 to 10	75 to 440	20.0					1.0		Middle Age	Good	Multi-stemmed willow with typical form and condition for species; recorded separately principally due to location along top of bank by footpath; not particularly noteworthy trees but not defective	B,1,2	Refer to Drawing	n/a		Long	N
G8	Sessile oak; rowan; dogwood; ash; dog rose; downy birch; alder; grey willow; field maple; osier	7.0	75 to 120	10+					0.0		Young	Good	Small trees at path junction; good species mix and good potential; bat boxes on pole	C,1,2	Refer to Drawing	n/a		Long	N
G9	Elder; hawthorn; goat willow; field maple; gorse; grey willow; sessile oak; ash; downy birch; grey willow	7.0	75 to 200	10+					0.0		Young to Middle Age	Good	Narrow line/hedge of plantation; forms a wind break around the west of pond area; adjacent to footpath; good potential; connectivity function	B,2	Refer to Drawing	n/a		Long	N
G10	Gorse; dog rose; hawthorn; grey willow; goat willow	5.0	75 to 150	10+					0.0		Young to Middle Age	Good	Small scattered trees on banks/slopes around ponds, scrubby form	C,1	Refer to Drawing	n/a		Long	N

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G11	Downy birch; ash; alder; sessile oak; goat willow; rowan; hazel; aspen	9.0	75 to 250	10+					0.0		Young to Middle Age	Good	Young plantation woodland adjacent to ancient woodland and pond area; dense and bramble congested in places; mainly ash and birch at northern end; good potential; forming setting for footpath; mostly around 7m in height; alder not generally in good condition	B,1,2	Refer to Drawing	n/a		Long	N
G12	Field maple; goat willow; ash; hazel; blackthorn; sessile oak	11.0	75 to 300	10+					0.0		Young to Middle Age	Good	Boundary row with canopy dominated by ash and understorey dominated by blackthorn and forming a loose hedge; taller at the northern end; none mature; reducing to a tighter and smaller hedge at the southern end	C,2,3	Refer to Drawing	n/a		Long	N
G13	Blackthorn	3.0	75 to 50	10+					0.0		Young	Good	Dense thicket by footpath junction	C,1,3	Refer to Drawing	n/a		Long	N
G14	Rowan; field maple; alder; downy birch; goat willow; sessile oak	8.0	75 to 120	10+					0.0		Young to Middle Age	Good	Small stand of plantation woodland; broken bat box	C,1,2,3	Refer to Drawing	n/a		Long	N
G15	Sessile oak; black pine; downy birch; osier; alder; field maple; ash; rowan; goat willow; aspen; white poplar	9.0	75 to 300	10+					0.0		Middle Age	Good	Plantation screening adjacent industrial unit; non-natural in character; potential to grow larger and screen entire side of building; bat boxes on pole are damaged and not capable of working	B,2	Refer to Drawing	n/a		Long	N
G16	Field maple; hawthorn; ash; dog rose; sessile oak	8.0	75 to 200	10+					0.0		Middle Age	Good	Trees and loose hedgerow by drainage ditch; ash and oak the main canopy species with hawthorn underneath; good vigour; none mature	B,2,3	Refer to Drawing	n/a		Long	N
G17	Osier; grey willow; hawthorn; white poplar	9.0	75 to 200	10+					0.0		Young to Middle Age	Good	Trees screening adjacent houses; dense with bramble undergrowth; northern part only bramble; isolated stand with no mature trees	C,2,3	Refer to Drawing	n/a		Long	N
G18	Rowan; cypress; cotoneaster; ornamental cherry; blackthorn; apple; hawthorn; field maple; laurel	7.0	75 to 200	10+					0.0		Young to Middle Age	Good	Ornamental trees in residential gardens and with occasional self-set trees and bramble within site; some screening function	C,2	Refer to Drawing	n/a		Long	N
G19	Hawthorn; sessile oak; downy birch; ash	6.0	75 to 180	10+					0.0		Young to Middle Age	Good	Good linear hedge/tree row by footpath; mixed species; could be allowed to develop or failed to maintain dimensions	C,1,2	Refer to Drawing	n/a		Long	N

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G20	Privet; field maple; dog rose; viburnum; hawthorn; holly; dogwood; hazel	1.5	<30	10+					0.0		Young	Good	New planting in strip approximately 5m wide along industrial building; apparently for screening but still very small with stakes and tubes in place; similar to H4 but not a single row	C,1	Refer to Drawing	n/a		Long	N
G21	Ash	5.0	75 to 100	c.15					2.0		Middle Age	Fair	Trees within managed hedge	C,1	Refer to Drawing	n/a		Long	N
G22	Swedish whitebeam; ash; sycamore	3.0	75 to 120	c.10					0.0		Young to Middle Age	Good	Small trees at bases of poles beneath overhead line; trees will require cutting when they outgrow the location	C,1	Refer to Drawing	n/a	Prune or remove in accordance with Energy Networks Association guidance	Short	N
G23	Grey willow; sessile oak; ash; alder; rowan; beech; black pine	9.0	75 to 250	10+					0.0		Young to Middle Age	Good	Mixed plantation woodland; good quality but still rather small; trees at eastern end tend to be younger; good potential but alder not doing well	B,1,2	Refer to Drawing	n/a		Long	N

Hedges

H1	Blackthorn, Common ash, Common hawthorn, Dog rose, Field maple	2 to 3	75 to 120	750.0							Middle Age	Good	Managed hedge on field boundary; top not cut this year		Refer to Drawing	n/a	Continue to cut or flail at least annually	Long	N
H3	Blackthorn, Common ash, Common hawthorn, Common hazel, Dog rose, Field maple, Goat willow, Pedunculate oak	2 to 4	75 to 120	1500.0							Middle Age	Good	Hedge on field boundary behind fence and on margin of woodland W7; in places is effectively hedged trees on woodland edge; mixed broadleaved; good quality		Refer to Drawing	n/a	Continue to cut or flail at least annually	Long	N
H4	Common ash, Common hawthorn, Dog rose, Field maple	2.5 to 3.5	75 to 120	750.0							Middle Age	Good	Hawthorn dominated hedgerow with other native broadleaved species; parallel with H4 either side of track		Refer to Drawing	n/a	Continue to cut or flail at least annually	Long	N
H5	Common ash, Common hawthorn, Dog rose, Field maple	2.5 to 3.5	75 to 120	750.0							Middle Age	Good	Hawthorn dominated hedgerow with other native broadleaved species; parallel with H3 either side of track		Refer to Drawing	n/a	Continue to cut or flail at least annually	Long	N
H6	Common alder, Common hawthorn, Common hazel, Field maple, Grey willow, Pedunculate oak	2.5 to 5	75 to 120	750.0							Middle Age	Good	Somewhat overgrown hedgerow alongside footpath; opposite woodland W6 and, in combination, enclosing footpath overhead in places; managed on field side to the north; mixed species		Refer to Drawing	n/a	Continue to cut or flail at least annually to maintain northern dimension; maintain passage of footpath as necessary by cutting southern side	Long	N
H7	Common hawthorn, Common privet, Dog rose	2.0	75 to 100	250.0							Middle Age	Fair	Managed hedge by allotments; somewhat sparse in places		Refer to Drawing	n/a	Continue to cut or flail at least annually	Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
H7	Ash; elder; dog rose; hawthorn; sessile oak; field maple	4.0	75 to 350	10+							Middle Age	Good	Managed hedge by track		Refer to Drawing	n/a		Long	N
H8	Hawthorn; ash; elder	3.5	75 to 750	10+							Middle Age	Good	Hawthorn dominated hedge; not recently cut; with ivy		Refer to Drawing	n/a		Long	N
H9	Hawthorn	2.0	<50	10+							Young to Middle Age	Good	Small hedge by ditch; a continuation of G9 but with no larger trees		Refer to Drawing	n/a		Long	N
H10	Privet; field maple; dog rose; viburnum; hawthorn; holly; dogwood; hazel	1.5	<30	10+							Young	Good	New hedge still with stages and tubes; mixed broadleaved in clusters of species; by footpath and along fenceline associated with adjacent industrial building		Refer to Drawing	n/a		Long	N
H11	Ash; hawthorn; field maple	2.5	<50	10+							Middle Age	Good	Managed hedge		Refer to Drawing	n/a		Long	N
H12	Hawthorn	4.0	75 to 100	10+							Middle Age	Good	Managed hedge		Refer to Drawing	n/a		Long	N
Woods																			
W1	Austrian pine, Common alder, Common ash, Common hawthorn, Common hazel, Dog rose, Downy birch, Elder, English holly, Field maple, Goat willow, Grey poplar, Grey willow, Pedunculate oak, Rowan, Scots pine, Silver birch, Swedish whitebeam, White poplar	4 to 14	75 to 280	6000.0					1.5		Middle Age	Good	Plantation developing well into young woodland; still with limited structure; dense in places; alder consistently with dead canopy but sprouting from the base; some fly tipping and dilapidated camping shelter/tarpaulins and insulation material	B,1,2,3	Refer to Drawing	n/a	Thin 20%	Long	N
W2	Austrian pine, Common alder, Common ash, Common hazel, Downy birch, Elder, English holly, Field maple, Goat willow, Gorse, Grey willow, Pedunculate oak, Rowan	4 to 8	75 to 220	880.0					1.5		Young to Middle Age	Good	Plantation woodland; very dense; including a proportion of conifer	C,1,2	Refer to Drawing	n/a	Thin 20%	Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
W3	Common alder, Common ash, Common hawthorn, Common hazel, Downy birch, Elder, English holly, Field maple, Goat willow, Grey willow, Pedunculate oak, Rowan, Silver birch, White poplar	4 to 10	75 to 240	1000.0					1.5		Middle Age	Good	Stand of woodland plantation in middle of field; denser on edges; otherwise as per other plantation woodland on the site; mixed broadleaved with good potential but as yet immature; less connected into the wider treescape than other compartments	B,1,2	Refer to Drawing	n/a	Thin 20%	Long	N
W4	Common alder, Common ash, Common hawthorn, Common hazel, Downy birch, English holly, Field maple, Goat willow, Grey willow, Pedunculate oak, Rowan, Silver birch, Swedish whitebeam	4 to 11	75 to 240	6000.0					0.0		Young to Middle Age	Good	Plantation woodland; very similar in composition to all others on site	B,1,2,3	Refer to Drawing	n/a	Thin 20%	Long	N
W5	Common alder, Common ash, Common hawthorn, Field maple, Goat willow, Grey willow, Pedunculate oak, Rowan, Silver birch	4 to 10	75 to 220	1500.0					0.0		Young to Middle Age	Good	Continuation of W4 after small natural clearing/gap at running water; willow dominated at western end; dense in places; broadly similar to other plantation woodland across site	B,1,3	Refer to Drawing	n/a	Thin 20%	Long	N
W6	Common alder, Common ash, Common hawthorn, Common hazel, Downy birch, Elder, Goat willow, Grey willow, Pedunculate oak, Rowan, Silver birch, Swedish whitebeam	4 to 11	75 to 250	1100.0					1.0		Middle Age	Good	Mixed broadleaved plantation woodland; dense along northern edge and with bramble; good potential although still quite immature; multi-stemmed trees at south-western end; problem littering in localised spots	B,1,2,3	Refer to Drawing	n/a	Thin 20%	Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
W7	Common alder, Common ash, Common hawthorn, Common hazel, Dog rose, Elder, Field maple, Goat willow, Grey poplar, Grey willow, Pedunculate oak, Silver birch	4 to 12	75 to 280	4000.0					1.5		Middle Age	Good	Developing plantation woodland with hedged perimeter and access path/track adjacent; good potential; dense in places; not significantly different than other plantation woodland on the site; birch generally the tallest species	B,1,2,3	Refer to Drawing	n/a	Thin 20%	Long	N
W8	Common alder, Common ash, Common hawthorn, Common hazel, Dog rose, Downy birch, Elder, Field maple, Goat willow, Grey poplar, Grey willow, Pedunculate oak, Rowan, Silver birch	4 to 12	75 to 250	1600.0					1.0		Young to Middle Age	Good	Plantation woodland; relatively immature and dense in places but with good diversity of species and good potential to develop; hedged on south-western and northern edges	B,1,2,3	Refer to Drawing	n/a	Thin 20%	Long	N
W9	Austrian pine, Common alder, Common ash, Common hawthorn, Common hazel, Dog rose, Downy birch, Elder, English holly, Field maple, Goat willow, Grey poplar, Grey willow, Pedunculate oak, Rowan, Scots pine, Silver birch, Swedish whitebeam, White poplar	2 to 15	75 to 380	3500.0					0.5		Middle Age	Good	Young woodland with developing structure; on sloping ground around stream; some open areas and scrub; screens housing and commercial property to the west; adjacent to public footpath; good potential	B,1,2,3	Refer to Drawing	n/a	Thin 20%	Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
W10	Sessile oak; English oak; ash; downy birch; alder; rowan; field maple; hawthorn; osier; dogwood; hazel; goat willow; sweet chestnut; aspen; Swedish whitebeam	13.0	75 to 400	10+					0.0		Young to Middle Age	Good	Good quality plantation woodland; mixed broadleaved with early emerging woodland characteristics including regeneration, dead wood, age structure and areas of denser undergrowth; most trees are up to 200mm in diameter; screening for road; good potential; occasional frassing by muntjac; alder suckering prolifically; phytophthora in area, mainly on alder; good potential	B,1,2	Refer to Drawing	n/a		Long	N
W11	English oak; sessile oak; downy birch; silver birch; hawthorn; elder; goat willow; grey willow; ash; elder; hawthorn; white poplar; hazel	14.0	75 to 750	10+					0.0		Mixed Age	Good	Mixed native broadleaved woodland including ancient semi natural; trees on slopes to east of pond and extending to north beyond site and along boundary to east beneath power line; screening adjacent properties; internal glade/clearing with open grown birch; footpaths; canopy mainly of ash but good mix overall; large stone culvert structure at western side with old walls and brick paths; woodpecker nesting; high quality woodland well connected to wider woodland network	A,1,2,3	Refer to Drawing	n/a		Long	N

APPENDIX B: Survey Method

APPENDIX B: SURVEY METHOD

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

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

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

Species	The common name is given. The Latin name may also be given if further clarification is required.	
Height	Top height of tree recorded in metres.	
Stem Diameter	For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres. For multi-stemmed trees an average all stems measured at 1.5m above ground level is used. For tree groups a range from minimum to maximum diameters is provided based on measurements taken using one of the aforementioned methods.	
No. of Stems	A count of stems arising below a height of 1.5 metres.	
Crown Spread	The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.	
Height of Lowest Branch	Crown clearance above ground level recorded in metres.	
Direction of Lowest Branch	The direction of growth of the first significant branch from the point of attachment.	
Maturity	Young	Trees that can reasonably be relocated or replaced like for like, without undue cost;
	Middle Age	Trees in the established growth stage of their life with the potential to continue increasing in size;
	Mature	Trees that have reached their ultimate size, given their location and surroundings;
Condition	Good, Fair, Poor. An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account. Veteran. Trees that are in such a condition as to significantly increase their biological, cultural or aesthetic value. This is characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.	
Comments	A brief evaluation and description of the tree with comments on form, vitality, health and any significant defects or symptoms of ill-health.	

BS 5837 Tree Quality Assessment

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

Root Protection Area (RPA)

The RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (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 NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

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

NOTES:

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

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

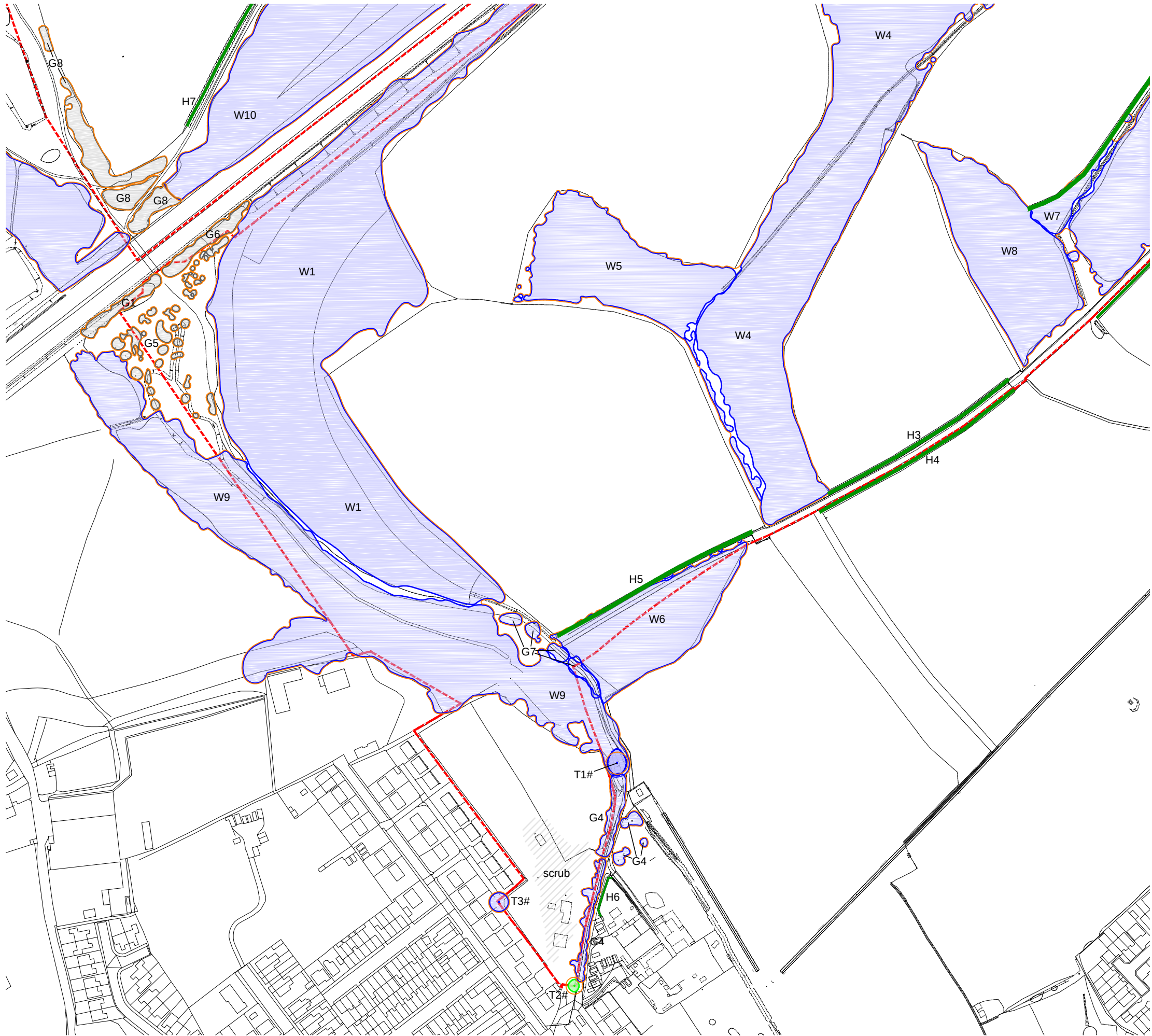
DRAWINGS

Drawing 1 - Tree Constraints Plans (1 to 4)

Drawing 2 - Tree Works Plan s (1 to 4)

Drawing 3 – Tree Protection Plan s (1 to 4)

Drawing 4 – Tree Protection Fencing Specification



KEY

[This drawing must be reproduced in colour]

- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)

Tree Quality Categorisation

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

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

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



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Project
Rockingham, Arboricultural Impact Assessment

Title
Drawing 1: Tree Constraints Plan 1 [BASELINE]

Drawing Number
D7890.001

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	15/10/2019



KEY

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- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)

Tree Quality Categorisation

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

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

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



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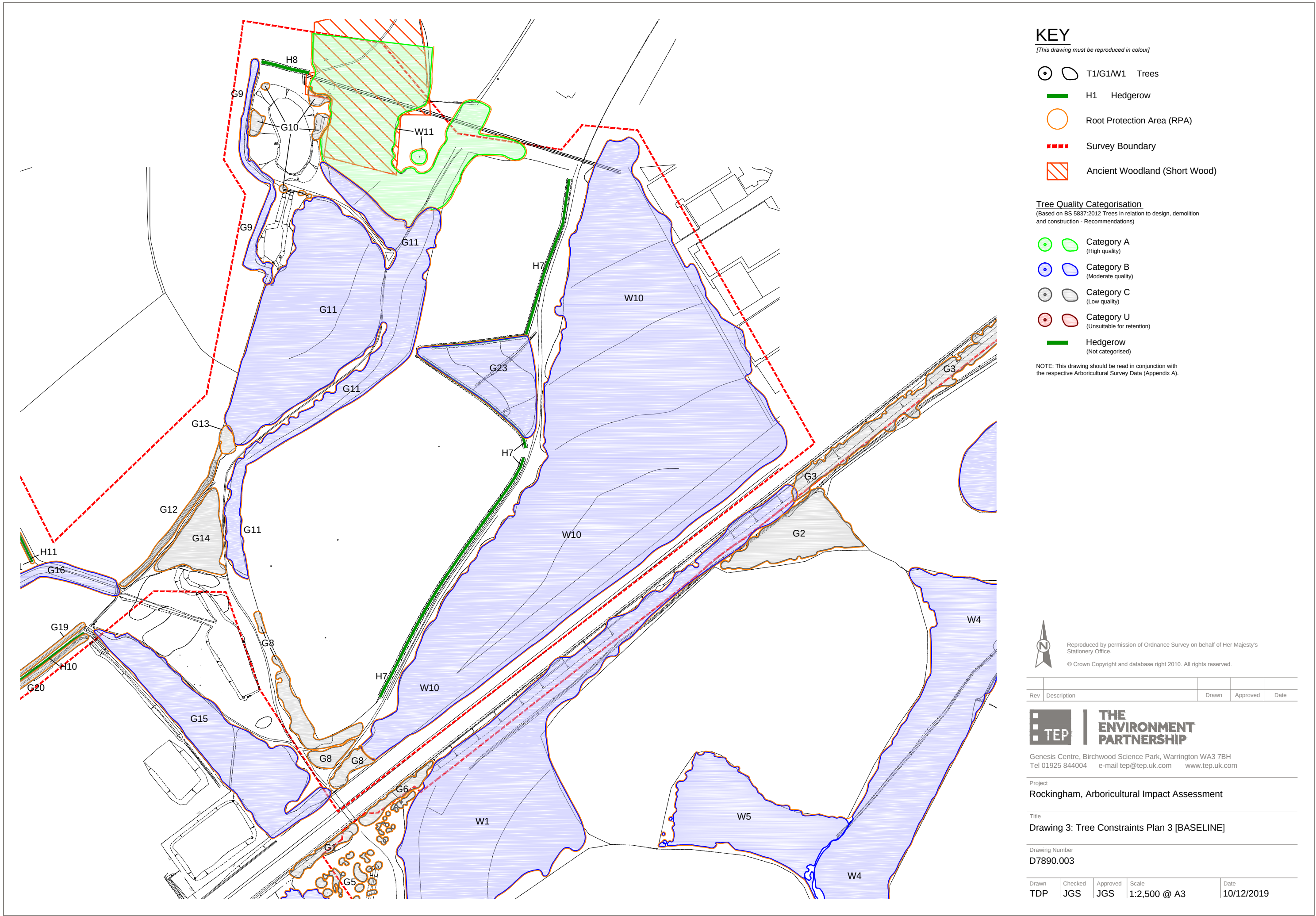
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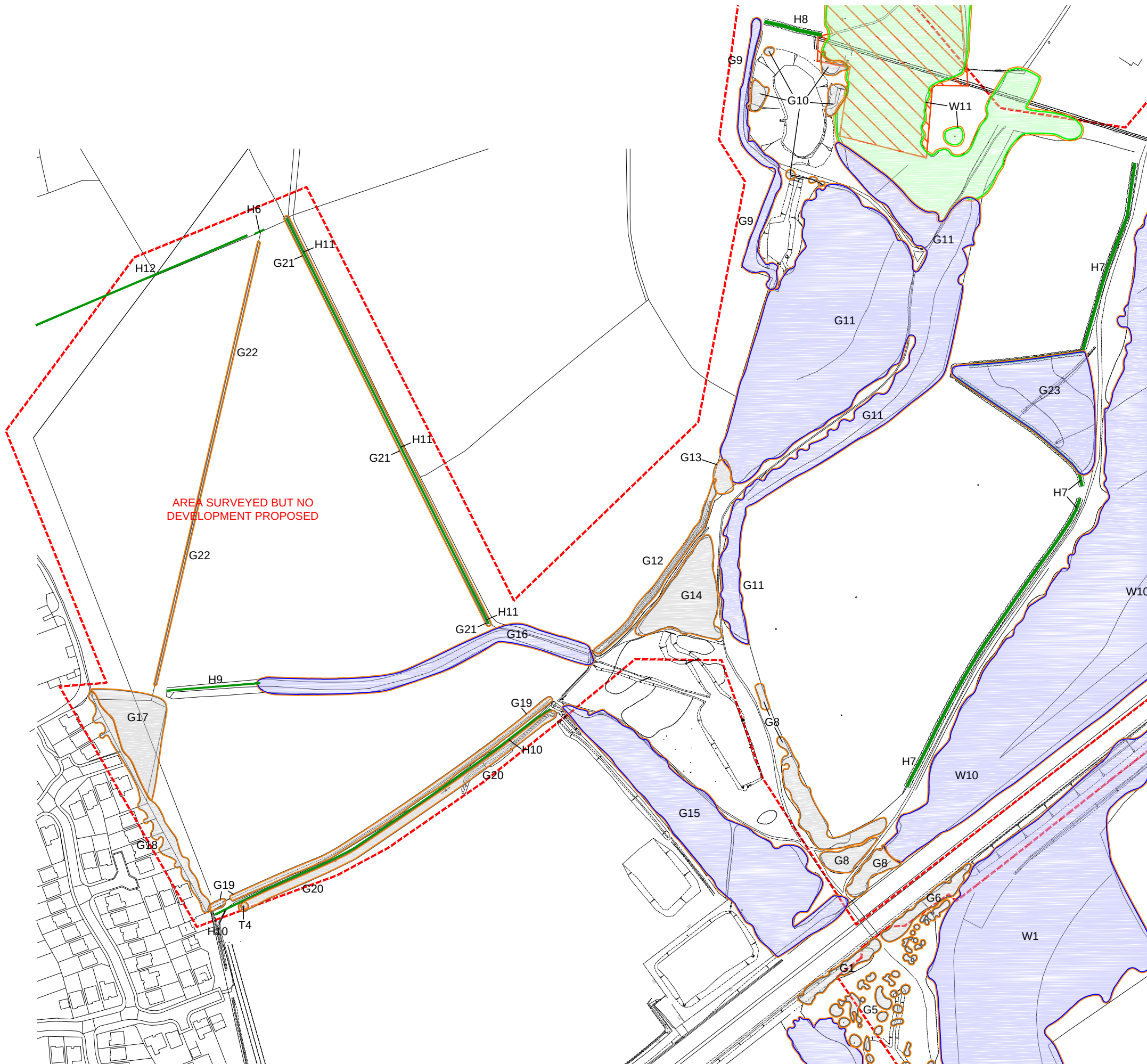
Project
Rockingham, Arboricultural Impact Assessment

Title
Drawing 2: Tree Constraints Plan 2 [BASELINE]

Drawing Number
D7890.002

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	15/10/2019





KEY

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- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)

Tree Quality Categorisation

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

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

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



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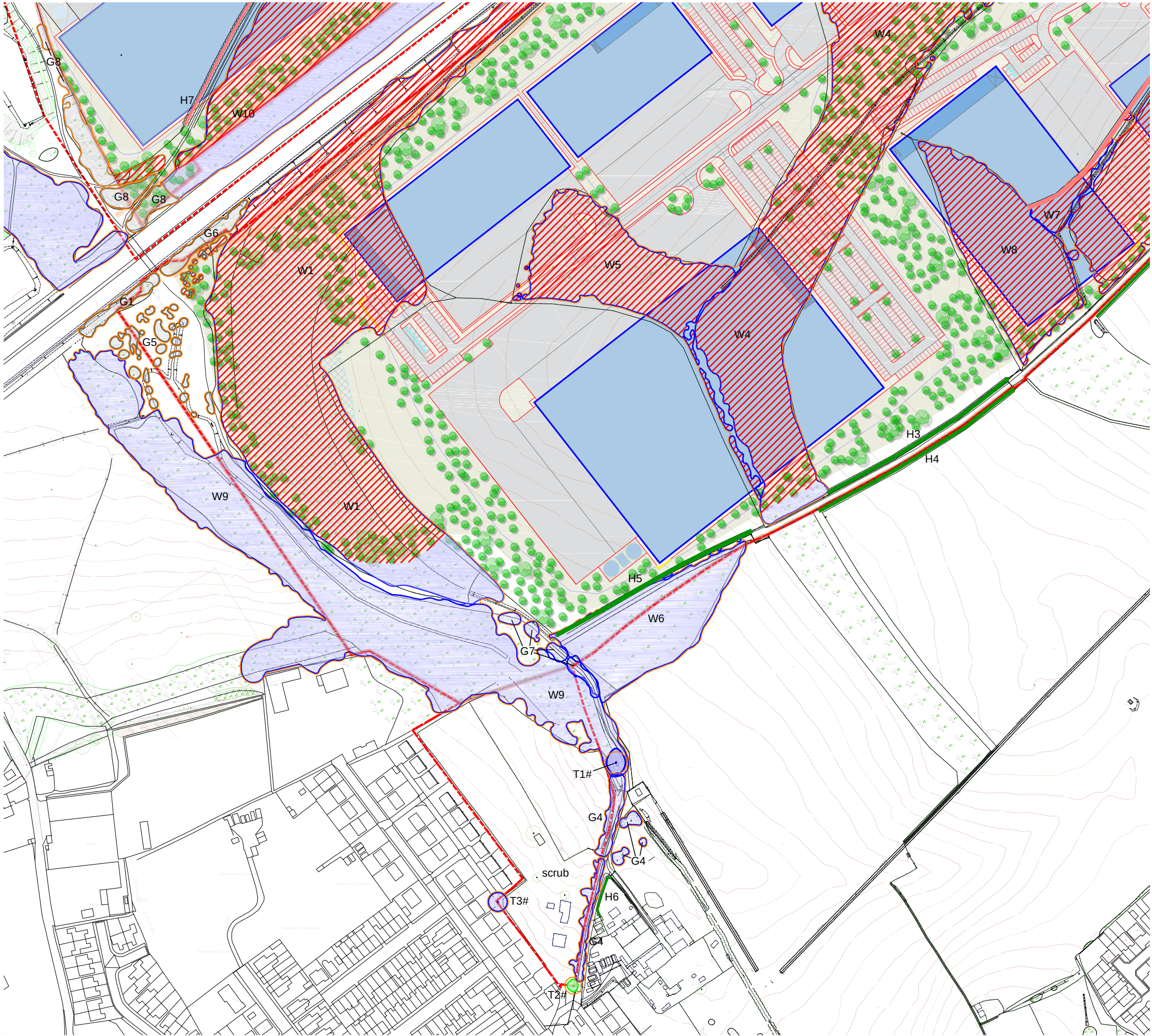
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Project
Rockingham, Arboricultural Impact Assessment

Title
Drawing 4: Tree Constraints Plan 4 [BASELINE]

Drawing Number
D7890.004

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	10/12/2019



KEY

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- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)
- # Approximate location
(Feature not shown on topo)
- * Statutory protection
(TPO, Conservation Area, etc.)

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)
- Hedgerow
(Not categorised)

Proposed tree and hedgerow works

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

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



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Project
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Title
Drawing 5: Tree Works Plan 1 [EFFECTS]

Drawing Number
D7890.005

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	10/12/2019



KEY

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- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)
- # Approximate location
(Feature not shown on topo)
- * Statutory protection
(TPO, Conservation Area, etc.)

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)
- Hedgerow
(Not categorised)

Proposed tree and hedgerow works

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

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



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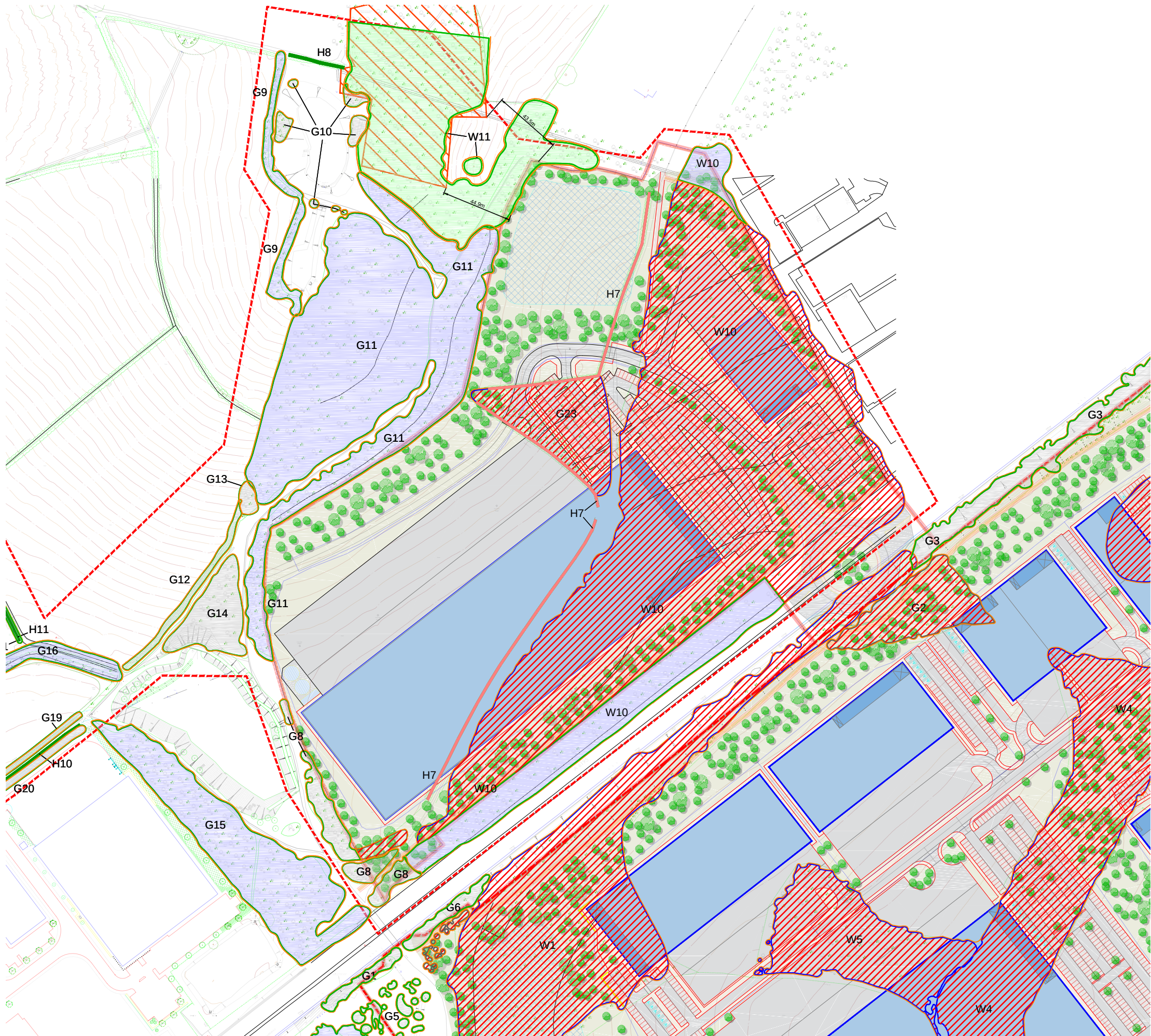
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Project
Rockingham, Arboricultural Impact Assessment

Title
Drawing 6: Tree Works Plan 2 [EFFECTS]

Drawing Number
D7890.006

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	10/12/2019



KEY

[This drawing must be reproduced in colour]

- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)
- # Approximate location
(Feature not shown on topo)
- * Statutory protection
(TPO, Conservation Area, etc.)

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)
- Hedgerow
(Not categorised)

Proposed tree and hedgerow works

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

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



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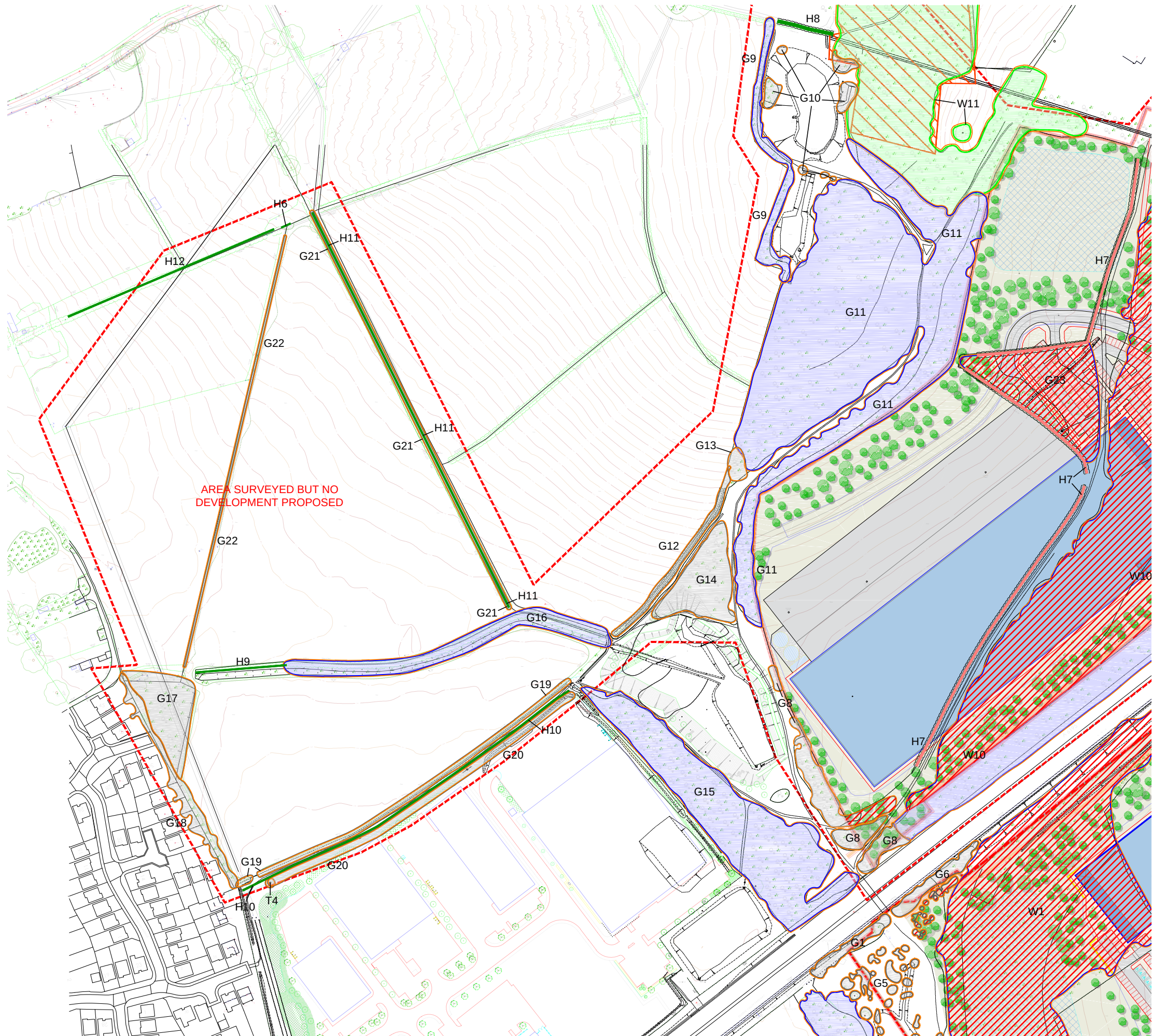
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Project
Rockingham, Arboricultural Impact Assessment

Title
Drawing 7: Tree Constraints Plan 3 [BASELINE]

Drawing Number
D7890.007

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	10/12/2019



KEY

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- T1/G1/W1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)
- # Approximate location (Feature not shown on topo)
- * Statutory protection (TPO, Conservation Area, etc.)

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)
- Hedgerow (Not categorised)

Proposed tree and hedgerow works

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

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



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Project
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Title
Drawing 8: Tree Works Plan 4 [EFFECTS]

Drawing Number
D7890.008

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	10/12/2019



KEY

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-   T1/G1/W1 Retained trees, groups and woodland
-  H1 Retained hedgerow
-  Root Protection Area (RPA)
-  Survey Boundary
-  Ancient Woodland (Short Wood)
-  # Approximate location
(Feature not shown on topo)
-  * Statutory protection
(TPO, Conservation Area, etc.)
-  Tree Protection Fencing (c. 2,620m)
(Must be installed prior to works commencement)
-  Arboricultural Method Statement
(Detail of tree removal to form new woodland edge to be refined on site under watching brief)



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Rev	Description	Drawn	Approved	Date
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THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Rockingham Arboricultural Impact Assessment

Title
Drawing 9: Tree Protection Plan [EFFECTS]

Drawing Number
D7890.009

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	12/12/2019



KEY

[This drawing must be reproduced in colour]

-  T1/G1/W1 Retained trees, groups and woodland
-  H1 Retained hedgerow
-  Root Protection Area (RPA)
-  Survey Boundary
-  Ancient Woodland (Short Wood)
-  # Approximate location
(Feature not shown on topo)
-  * Statutory protection
(TPO, Conservation Area, etc.)
-  Tree Protection Fencing (c. 2,620m)
(Must be installed prior to works commencement)
-  Arboricultural Method Statement
(Detail of tree removal to form new woodland edge to be refined on site under watching brief)



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Project
Rockingham Arboricultural Impact Assessment

Title
Drawing 10: Tree Protection Plan [EFFECTS]

Drawing Number
D7890.010

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	12/12/2019



KEY

[This drawing must be reproduced in colour]

-   T1/G1/W1 Retained trees, groups and woodland
 -  H1 Retained hedgerow
 -  Root Protection Area (RPA)
 -  Survey Boundary
 -  Ancient Woodland (Short Wood)
 -  Approximate location
(Feature not shown on topo)
 -  Statutory protection
(TPO, Conservation Area, etc.)
 -  Tree Protection Fencing (c. 2,620m)
(Must be installed prior to works commencement)
 -  Arboricultural Method Statement
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Project

Rockingham Arboricultural Impact Assessment

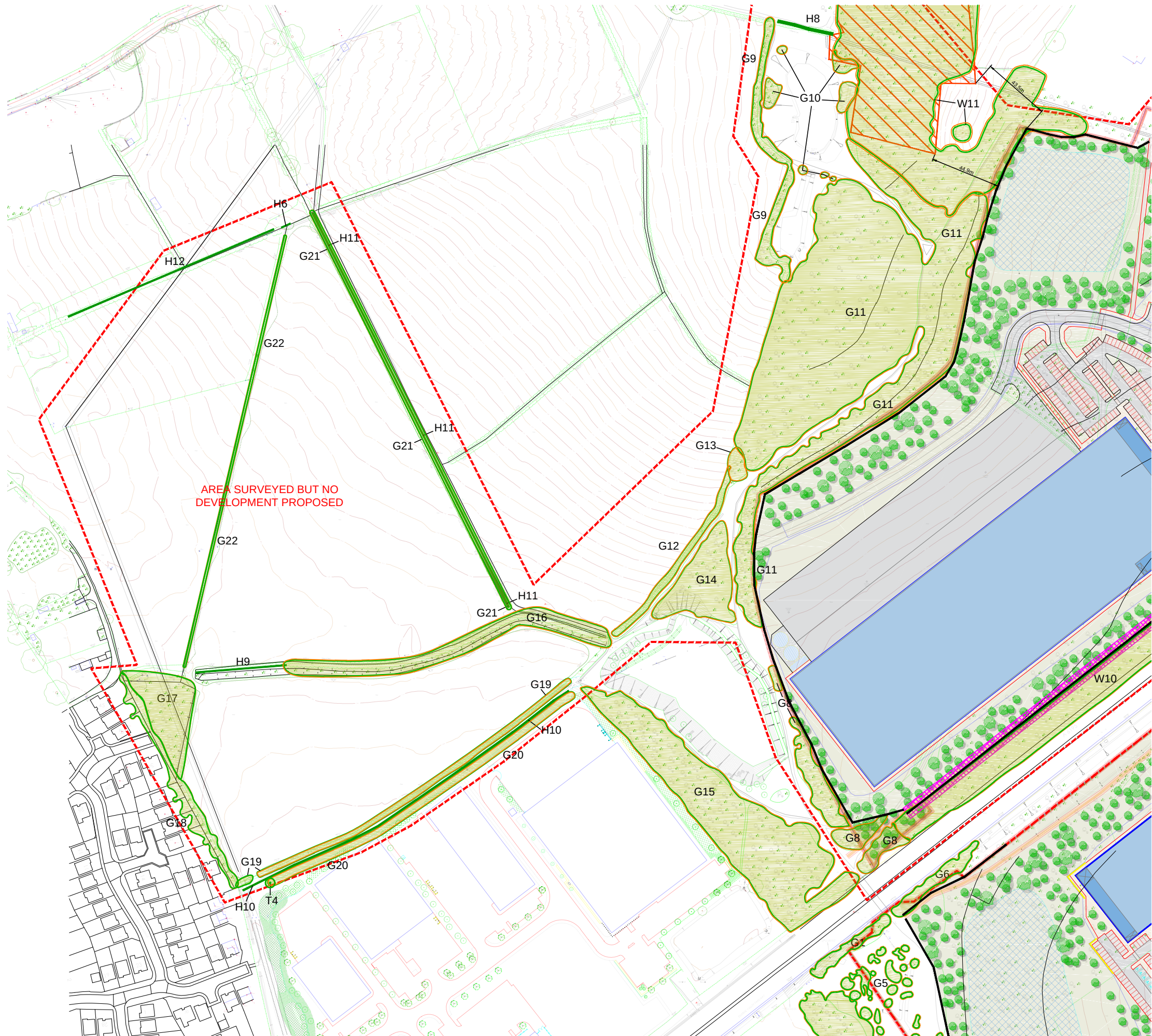
Title

Drawing 11: Tree Protection Plan [EFFECTS]

Drawing Number

Drawing Number
D7890.011

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	12/12/2019



KEY

[This drawing must be reproduced in colour]

- T1/G1/W1 Retained trees, groups and woodland
- H1 Retained hedgerow
- Root Protection Area (RPA)
- Survey Boundary
- Ancient Woodland (Short Wood)
- # Approximate location (Feature not shown on topo)
- * Statutory protection (TPO, Conservation Area, etc.)
- Tree Protection Fencing (c. 2,620m) (Must be installed prior to works commencement)
- Arboricultural Method Statement (Detail of tree removal to form new woodland edge to be refined on site under watching brief)



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Rev	Description	Drawn	Approved	Date
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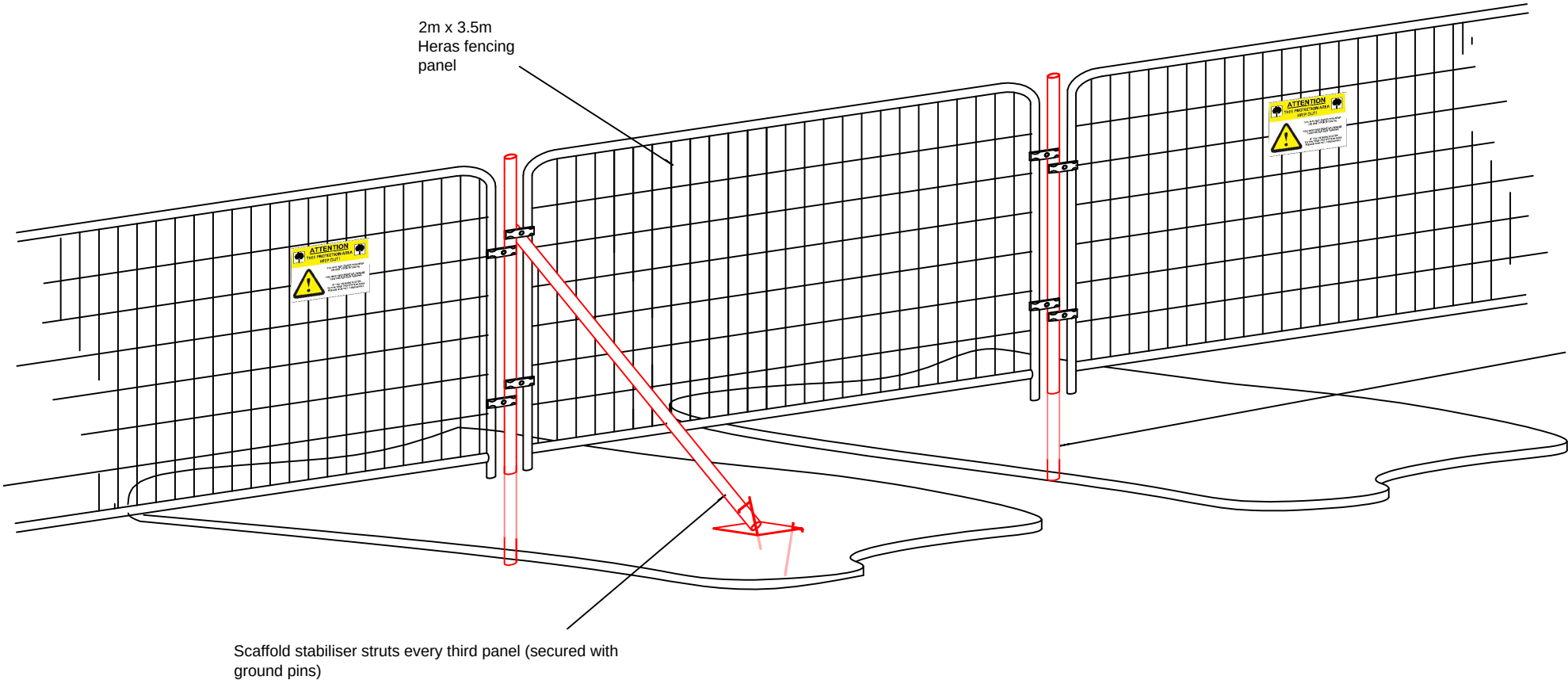
Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
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Project
Rockingham Arboricultural Impact Assessment

Title
Drawing 12: Tree Protection Plan [EFFECTS]

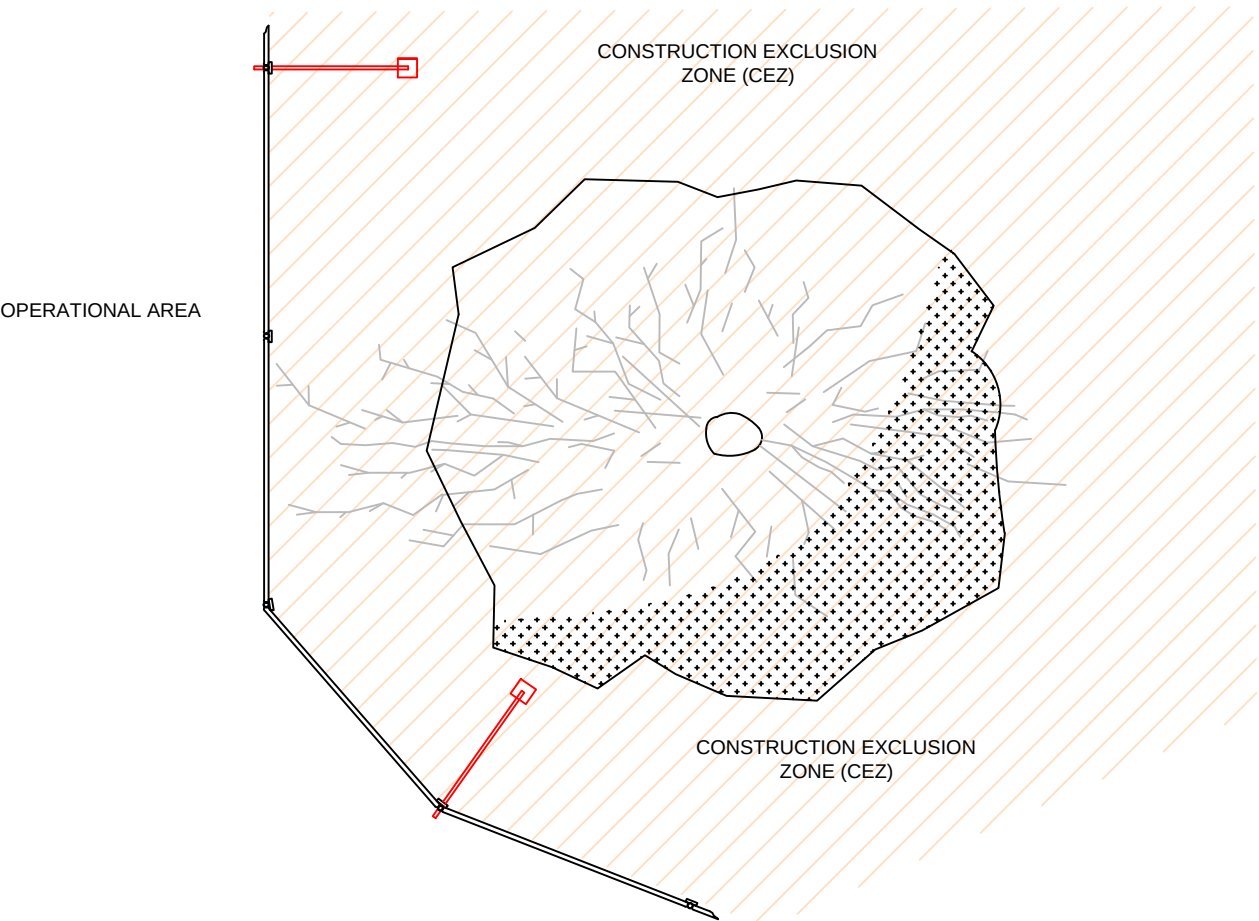
Drawing Number
D7890.012

Drawn	Checked	Approved	Scale	Date
TDP	JGS	JGS	1:2,500 @ A3	12/12/2019



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:



Rev	Description	Drawn	Approved	Date

TEP

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project

Title

Tree Protection Fencing Specification

Drawing Number

D.TREE_FENCING.001

Drawn	Checked	Approved	Scale	Date
TDP	RMG	JGS	(not to scale) @ A3	16/06/2016



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