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Iron Bridge Road North, West Drayton UB11 1BF

Arboricultural Impact Assessment

September 2023

Arboricultural Association Fellow Member

AA Registered Consultant trees.org.uk

UK Register of Expert Witnesses Registered

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We offer a range of services involving trees, woodlands and forestry in the built and rural environment:

Planning
TPO
Hazard Evaluation
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Law

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Chapter 1 Introduction

1.01
ACS Consulting is instructed by Clarke Telecom Ltd to report on trees and the implications for the proposed development at Iron Bridge Road North, West Drayton UB11 1BF. The assessment and report was undertaken by Ian Murat, Registered Consultant of the Arboricultural Association.

1.02
In accordance with guidance on information requirements and validation for planning applications, this report fulfils the recommended national list criteria for tree survey/arboricultural information. More specifically, it contains the following:

- A full tree survey to the requirements of BS5837 (2012) Trees In Relation To Design, Demolition and Construction – Recommendations;
- A plan showing tree survey information, retention categorisation and root protection areas;
- An assessment of the arboricultural implications of development detailing trees to be retained/removed and appropriate protection measures;
- An Arboricultural Method Statement detailing a set of agreed principles for tree protection, implementation and phasing of works.

1.03
The site was visited during September 2023. A survey of the trees was completed recording; species type, age, height, crown spread, diameter-at-breast-height and, condition.

Chapter 2 Background

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2.01 The Location
The site is located in the Stockley Park Campus, a site of commercial properties to the north of the Grand Union Canal, Hayes, West Drayton. (Figure 1).

2.02 Site
The site comprises an area of landscape structure planting adjacent to a car park.

2.03 Statutory Protection (Trees)
The application site is not located in a Conservation Area. The trees are not the subject of a Tree Preservation Order.

2.04 Soils
BS 5837 – 2012 requires a basic assessment of the soils on site. An examination of the British Geological Survey records the superficial deposits as: Lynch Hill Gravel Member - Sand and gravel. Sedimentary superficial deposit formed between 362 and 126 thousand years ago during the Quaternary period.

The Cranfield Soil and Agrifood Institute Soilscapes viewer shows soils at the site to be: Freely draining slightly acid loamy soils.

Figure 1 © Google

3.01
The tree data can be found at Appendix A. There is no requirement in BS 5837 to repeat the details of the constraints information save for confirming that the trees were surveyed for species type, age, height, crown spread, diameter-at-breast-height, condition, and their suitability for retention from ground level. Each tree or group was assigned to one of the four retention categories [A,B,C,U] specified by BS5837. The individual descriptions and other relevant information are contained in the attached schedule and they are shown on the attached plans, based on the original topographical survey. Only trees with a stem diameter of 75 millimetres measured at 1.5 metres above the ground are required to be recorded.

3.02
The heights were measured with a digital Hypsometer and the diameters were taken with a diameter tape to give an average stem measurement. Canopy spreads have been measured at the cardinal points or where they significantly extend in other directions.

Figure 2

Chapter 4 Development Implications

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4.01 Application
The application is for: Installation of 20m telecommunications base station supporting 6 no. antennas, 2 no. 300mm dishes, together with 2 no. ground based cabinets (painted fir green) and ancillary development thereto. [sic]

4.02 Development Implications
The methodology for assessment is based on BS5837 – 2012 Trees in relation to design, demolition and construction – Recommendations. The guidance recommends that impacts on arboricultural assets should be assessed by considering:

1. Which arboreal assets are affected by the proposed development;
2. Understand what contribution the arboreal assets make to the significance of the site and location;
3. Identify what impact the loss of arboreal assets of the site might have on that significance;
4. Consider maximising enhancements and avoiding harm.

4.03 Loss for Development
The application does not require the felling of trees.

4.04 Retained trees that may be affected by disturbance
The application has a slight impact on retained trees through works in the Root Protection Area (RPA). The location of the cabinets, services and concrete slabs will be located in the RPA of one prunus (T1). The mast will be located in the RPA of a linear group of poplar (G1).

There are a number of studies on the impact of the root severance. Studies[1] have shown the RPA calculated by the simplistic mathematical formula does not correspond to the wider root system correlations. At the current site, the impacts would be significantly less than the parameters cited. There is little correlation between the percentage RPA and root impairment or loss. Most RPAs tend to exceed canopy spread suggesting that RPA encroachment understates root loss. The informal reduction noted in BS5837 – 2012 of 20% may actually equate to a higher percentage loss. Studies1 suggest that between 30% and 50% root loss can be tolerated by trees though there may be some slight corresponding die back.

The tree genus involved (poplar and prunus) are of an age where they are capable of tolerating such root loss. In accordance with BS 5837 – 2012, there is ground contiguous to the RPA for compensatory root growth for the trees and remediation measures to improve the soil environment that is used by the tree for growth, in the form of vertical mulching, can be undertaken.

The poplar have been topped as a form of management reducing their category rating.

1) Thomas, P., (2014). Trees Their Natural History

4.04 Cont…
Overall, the impact of the installation of the mast and the cabinet base are not considered wholly detrimental to the retention of the trees. The Method Statement at Appendix B details the precautions to be taken.

4.05 Pruning
There is the requirement for Access Facilitation Pruning. The eastern canopy of T1 (prunus) will require crown lifting. Current separation is two metres. The separation will be increased to three metres. The increase has no implications for tree physiology or visual amenity.

Chapter 5 Conclusions

5.01
The application site is described in detail in the supplementary information statement.

5.02
The development, retains the site's principal arboreal features with a good spatial relationship. The precautions that need to be implicated to ensure the trees are retained are detailed in Appendix B.

Appendix A

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KEY

Age	Y – Young: Out-planted trees that have not yet established SM – Semi-mature: Established trees up to 1/3 of expected height and crown EM – Early mature: Between 1/3 and 2/3 of expected height and crown M – Mature: Between 2/3 and full expected height and crown FM – Fully mature: Full expected height and crown OM – Over mature: Crown beginning to break-up and decrease in size S – Senescent: Crown in advanced stage of break-up
Physiological Condition	Good – Very few defects a reasonable long life expectancy depending on age class Fair – Some defects giving the tree a shortened life expectancy Poor – Limited life with major problems
Structural Condition	Good – Very few defects Fair – Some defects rectifiable with minor tree surgery Poor – Significant defects rectifiable with major tree surgery or felling
#	Estimated dimensions.
(a)	Average stem diameter across a group of trees.
*	Tree subject to TPO.

Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria			Identification on Plan
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 U category trees (i.e. 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 might be desirable to preserve; see 4.5.7*			RED
	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 essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dormant 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)	GREEN
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.	BLUE
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 benefits	GREY

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M				Height of Crown Clearance M	Clear Branch Height M	Age Class	Physiological Condition	Structural Condition	Comments/Preliminary Management Recommendations	Estimated Remaining Contribution Years	Category Grading	RPA Radius (M)	RPA Area (M^2)
				N	E	S	W										
1	Prunus	10	285	4	5	5	2	2	2	SM/ EM	Good	Good	Structure planting. A tree of moderate quality and value in the landscape.	20+	B1/2	3.4	37
G1	Group	14	285	3	3	3	3	1	1	SM/ EM	Good	Good	Group of ash, field maple and sorbus. A group of moderate quality and value in the landscape.	20+	B1/2	3.4	37
G2	Poplar	12	380	2	2	2	2	2	2	SM/ EM	Good	Fair	4 trees topped at approximately 6-7m. Multiple attachment of regenerative growth. A group of low quality and value in the landscape.	10+	C1/2	4.6	65

Appendix B

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Construction Methods and Sequence

A Construction Method Statement and Timetable is to be drafted on the appointment of a construction firm. As noted in BS5837 – 2012 5.5.6 it is sufficient to list a heads of terms summary of the issues requiring more detailed consideration once consent is issued. On this site, those issues are likely to include:

- site construction access;
- the intensity and nature of the construction activity;
- phasing of construction works;
- the space needed for foundation excavations and construction works;
- the location and space needed for all temporary and permanent apparatus and service runs, including, electricity or other communication cables;
- working space for cranes, plant, scaffolding and access during works;
- space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete;
- the effects of slope on the movement of potentially harmful liquid spillages towards or into protected areas.

Arboricultural Supervision

The general purpose is to ensure compliance with planning conditions. It is anticipated that arboricultural input is likely to be needed for the following operations:

- Pre-commencement meeting;
- Tree pruning;
- Installation of protective fencing;
- Installation of ground protection:
- Excavation of foundation/services;
- Removal of protective measures.

All supervisory visits will be logged and a copy of the minutes circulated to all team members including the LPA. A number of the operations named above can be undertaken in a single visit.

The pre-commencement site meeting is to be held before any work is undertaken. All tree protection measures, haul routes, site storage, contractor parking, deliveries, working methods are set out in the main contractor's Construction Management Plan (CMP). Their coordination with the tree protection measures is to be freely discussed and agreed in writing. Initial site visits may be intense to ensure measures are implemented.

General site visits will be undertaken once the site is 'live' at intervals agreed with the team. Our role will be to initially to act in a compliance capacity to ensure the protective measures are fit for purpose and meet or exceed the council's requirements and the tree works are undertaken to the required standard. Once this has been completed, our role will be one of monitoring and 'troubleshooting'.

Actions

- Pre-commencement site meeting to agree roles, responsibilities and duties in relation to tree protection. Details to be minuted and distributed.
- Appointment of an Arboricultural Clerk of Works (ACoW) to oversee works.

Tree Felling/Stump Removal/Tree Pruning

The following precautions are to be taken.

Actions

- Trees to be removed shall be felled so as to fall away from tree protection zones and to avoid pulling and breaking of roots of trees to remain. Brush can be chipped into the tree protection zone to a depth of 150 mm.
- The roots shall be removed by severing the major woody root mass before extraction. This may be accomplished by Hydro Vacuum & Suction Excavation or Compressed Air Displacement and then, cutting through the roots by hand, with a vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment.
- Trees to be removed within the tree protection zone shall be removed by qualified tree contractors.
- All felled brush and trees shall be removed from the tree protection zone either by hand or with equipment sitting outside the tree protection zone. Extraction shall occur by lifting the material out or by 'skidding' it across the ground.
- Exposed roots to be kept moist with hessian sacking.
- Site inspections to be reported to the development team and the LPA.
- Tree pruning to BS3998 – 2010. No deviation from the specification.

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Tree Felling/Stump Removal/Tree Pruning

Tree Ref No.	Species	Work
1	Prunus	Crown lift eastern canopy to give 3 metres clear canopy height.

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Construction Exclusion Zone Root Protection

Due to the nature of the works, standard BS 5837 fencing will be used. The Construction Exclusion Zone fence will be heras fence panels fixed in place with braceblok™.

Actions

- Fencing installed at locations shown on the plan (ARB/4986/Y/100) and marked on site.
- Fence fixed with braceblok™.
- Location and adequacy signed off by Arboricultural Consultant and LPA advised.
- Tool Box Talk – make construction staff aware of the importance of areas by site manager.
- Signs to be erected advising of the area's importance.

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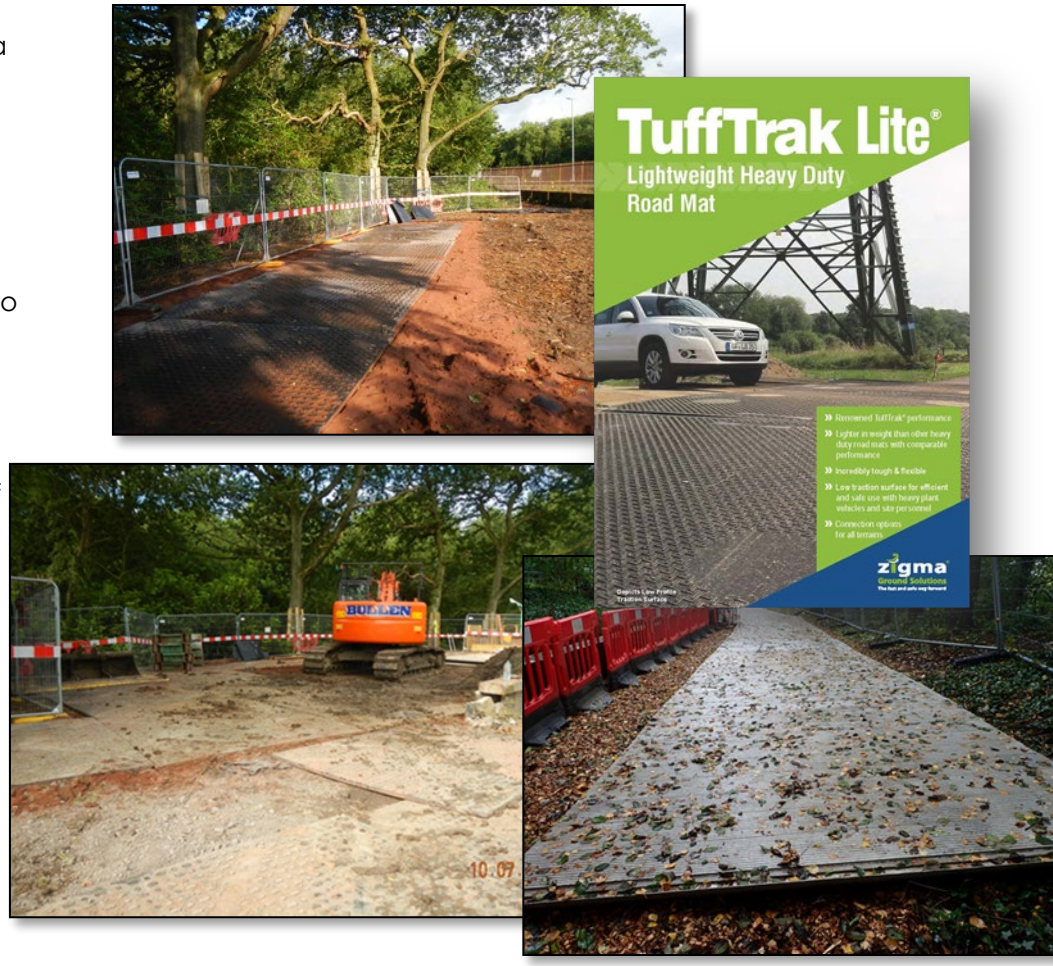
Construction Exclusion Zone Ground Protection
The Construction Exclusion Zone will be protected by Tuff Trak over a sand blinding. Adequate protection of trees requires the installation of the correct ground protection .

Actions

- The following applies to Tuff Trak (other systems follow a similar installation procedure).
- The existing grass and ground cover and any hard surfaces are to be removed by hand working.
- Permatex 300 geotextile to be laid with a sharp sand blinding layer, or wood chip compressible layer to bring to level.
- Tuff Trak laid over. This surface will be retained through the contract to form a working surface.
- Location and adequacy signed off by the Arboricultural Clerk of Works and the LPA advised.
- Works to be monitored by Arboricultural Consultant.



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Excavation in Construction Exclusion Zone Site Wide

Actions

- The works area is to be marked out. The ground to be protected as detailed. Turf to a depth of 75 mm to be removed by a turf iron.
- Soil tested to determine excavation method. Using either Hydro Vacuum & Suction Excavation, Pneumatic Vacuum & Suction Excavation or Clay-Spade Assisted Suction Excavation, a trench will be excavated.
- In all cases: Roots <25mm Ø are to be cut at the excavation face with secateurs. Roots >25mm Ø are to be assessed by the Arboricultural Consultant. Findings and decision on root retention/severance to be reported to the LPA.
- Where roots >25 mm Ø are retained around foundations they are to be wrapped in grey insulation foam (the sort the plumbers use) and then in plastic pipe cut vertically to go around, then taped up to make it watertight. These roots can be left in place and the concrete poured around the roots.
- Exposed roots to be kept moist with hessian sacking/terram.
- The excavation face to be lined with a root barrier (such as re-root 2000).
- Site inspections to be reported to the development team and the LPA.

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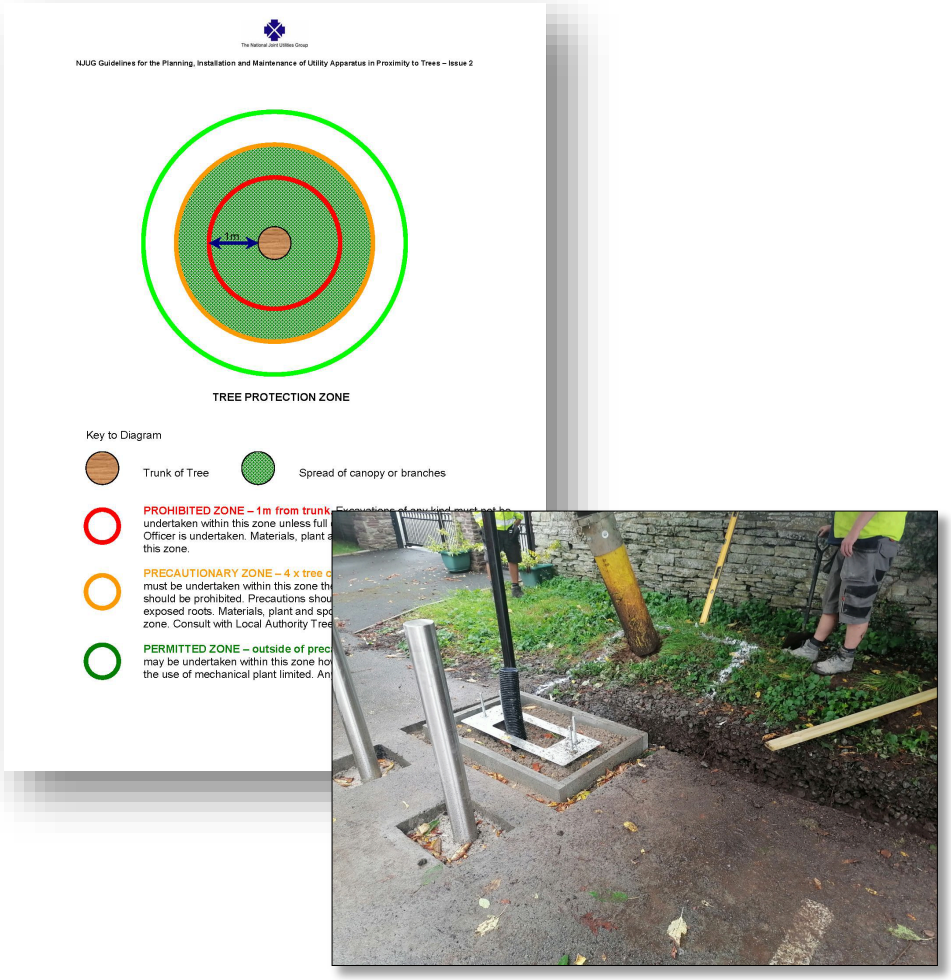
Services - NJUG 4.2

Work area to be marked out in accordance with NJUG 4.2.

Actions

- The precautionary area is to be identified.
- Suitable method of service installation to be identified this may include Hydro Vacuum & Suction Excavation or Compressed Air Displacement.
- Location and adequacy signed off by the ACoW and the LPA advised.
- Works to be monitored by ACoW.



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General Precautions

The retention of trees requires a number of general precautions to be taken. Compliance is to be maintained on site by the Arboricultural Consultant. The site visits are detailed at criterion 1 – Timing of Works.

Actions

- Spoil from the foundation pits or other excavations shall not be placed within the Construction Exclusion Zone.
- No materials, equipment, spoil or washout water may be deposited, stored or parked within the Root Protection Area/ Construction Exclusion Zone.
- On-site inspections to be undertaken by the Arboricultural Clerk of Works with the Arboricultural Consultant visiting during critical operations. The aim of the visits is to maintain on-going liaison with all personnel involved in the site development, Local Planning Authority and its Tree Officer.
- Any defects requiring rectification shall be notified to the Contractor/Site Manager/Arboricultural Consultant and the client.
- A site logbook for tree protection measures is kept to record all stages of the development from the erection of the protective fencing, right through to the completion of the project. This will be made available to the Arboricultural Consultant and the Local Planning Authority, if required, to show evidence of continuous site monitoring.

Protection and Emergency Procedure/Contacts

Adherence to the method statement, appointment of the Arboricultural Consultant and their involvement, at the critical demolition and construction phases, should negate any incident. The contact page details those personnel who should be contacted if an incident involving a retained tree should take place.

Actions

- Spill kit available.
- On site fuels to be located away from RPA/CEZ and contained in a bunded tank at 110% capacity.
- All incidents involving trees to be reported by telephone and email.
- Bunded storage of oil/fuels.
- Refuelling points for machinery at distance to the watercourse.
- Use of drop trays under plant/machinery overnight.
- Availability of spill kits on site – and training of site staff in their use.
- No excavation during periods of heavy rain.
- Regular maintenance and inspection of plant – engines and hydraulic systems.

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Contact List

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Design	TBA			
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