

**Tree Survey
Former Bierley Treatment Works,
Oakenshaw,
Junction 26 M62**

Report reference: AR-4003-01
September 2019

Report Title:	Tree Survey Former Bierley Treatment Works, Oakenshaw
Report Reference:	AR-4003-01
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Summary Statement

The Site is a narrow rectangular piece of sloping land between the M606 motorway, Hunsworth Beck, Cliff Hollins Lane and the M62 motorway in Oakenshaw. The former north Bierley water treatment works are situated to the eastern edge of the Site along Hunsworth Beck. Pastoral fields occupy the remainder of the Site. Access is obtained from Cliff Hollins Lane. Trees to the north of the main Site were also included in the survey.

The trees within the Site tend to line Hunsworth Beck at the east side and extend from Hanging Wood at the south-eastern edge of the Site. Remnant field boundary hawthorn trees are present on the western side. Small goat willows are establishing within the former treatment works. Immediately adjacent off-Site trees include tall hedge trees associated with the motorway verges. Trees within the wider Hanging Wood are noticeable to the east as are large field trees to the north-east. At this stage no trees are highlighted for removal however, development proposals should inform an arboricultural impact assessment.

This report should be read in conjunction with the attached Tree Constraints Plan Ref: DR-4003-01.

Introduction

Purpose of the report

1. This report has been commissioned to provide professional independent, detailed arboricultural advice on all relevant trees present at site address.
2. This report has been undertaken in accordance with BS 5837:2012 Trees in relation to construction – Recommendations.
3. The client has provided a topographical plan, drawing number SH10534-005, dated 18.03.2014.
4. All findings and recommendations are based on visual observations conducted from ground level during the Site visit only. No other diagnostic procedures were used to establish any extent of internal decay nor was a climbing inspection undertaken.
5. All measurements were obtained with the use of a clinometer and an electronic distometer. On occasion it is not viable to provide accurate measurements due to restricted access or other mitigating circumstances on site, and the data may be estimated.

Legal implications of work to trees

6. Due to the potentially large penalties for illegally carrying out work to protected trees, it is recommended that a check with the local planning authority is carried out prior to any tree works being undertaken and any required consents such as for work to trees with Tree Preservation Orders and/or Conservation Areas are obtained before work to trees on site. Additionally, work to trees at certain times of the year may contravene sections of the Wildlife and Countryside Act regarding nesting and roosting of protected species.

7. Every tree owner has a general duty of care to ensure their tree(s) does not pose an unacceptable risk to other people on or adjacent to their land. The landowner will only be liable for injury or damage caused by trees if they are found to be negligent.
8. There is no legal obligation for a tree owner to cut back growth from a neighbouring property. However, under Common law of tort of nuisance, an affected neighbour has the right to cut back roots or branches that encroach onto a neighbouring property back to the boundary of the land owned by the person abating the nuisance without the neighbour's consent (with the exception of TPO's or CA's). The person abating the nuisance has a duty to exercise reasonable care in carrying out work as a failure to do so may lead to liability in negligence (for example where removal of roots makes a tree unstable).

Site description

9. The Site is approximately 22.8 hectares of an elongated piece of land beside junction 26 of the M62 motorway and includes the former Bierley Treatment Works. Hunsworth Beck runs either just outside the boundary or just within the Site boundary to the east. The western boundary is the M606 motorway. The Site is accessed via Cliff Hollins Lane at the northern point of the Site. The M62 motorway runs at the southern end of the Site. Four residential properties off Cliff Hollins Lane border the Site to the north-west. A smaller, separate area of land between Cliff Hollins Lane and Mill Carr Hill Road was also included in the survey.
10. The former treatment works are located to the lower, eastern side of the Site alongside Hunsworth Beck and comprise redundant filter backs and tanks. The remainder of the Site is grazed grassland with remnant field trees. Metal security fences enclose the treatment works. Timber post and rail fencing separates the fields from the verge of the M606.
11. The topography is varied. A general slope exists from the western side of the Site down to Hunsworth Beck to the eastern side. Small steep slopes are found around the treatment works and to the sides of Hunsworth beck in places. The highest ground on the Site occurs in the north-western corner near the residential properties.
12. Offsite trees are located around the Site, including mature field trees and woodland (Hanging Wood) to the east. Hedge and small trees are immediately outside the Site boundary alongside the M606 and the M62.

Survey conditions

13. The trees were surveyed in warm, sunny conditions enabling clear survey, on 19th September 2019.

Tree data abbreviations and survey methodology

T	Tree	GL	Ground level
G	Tree group	MS	Multi-stemmed
H	Hedge	AFP	Access facilitation pruning
OSB	Outside Site boundary	Ave	Average dimension
#/est	Estimated dimension	Typ	Typical dimension
N	North	E	East
S	South	W	West
Min	Minimum	Lwr	Lower
adj	Adjacent	Ht	Height

14. The trees were assessed visually from ground level. Where access to a tree is restricted this is noted in the schedule.
15. The tree reference numbers refer to the attached Tree Constraints Plan (TCP) references. The trees were not tagged for this survey.
16. The tree species is listed by common name in the schedules, with a key to scientific names below:

Common name	Botanical name	Common name	Botanical name
Alder (common)	<i>Alnus glutinosa</i>	Goat willow	<i>Salix caprea</i>
Alder (grey)	<i>Alnus incana</i>	Hawthorn	<i>Crataegus monogyna</i>
Apple	<i>Malus domestica</i>	Hazel	<i>Corylus avellana</i>

Aspen	<i>Populus tremula</i>	Holly	<i>Ilex aquifolium</i>
Ash	<i>Fraxinus excelsior</i>	Hornbeam	<i>Carpinus betulus</i>
Beech	<i>Fagus sylvatica</i>	Larch	<i>Larix decidua</i>
Birch (silver)	<i>Betula pendula</i>	Lime (common)	<i>Tilia x europaea</i>
Birch (downy)	<i>Betula pubescens</i>	Lime (small-leaved)	<i>Tilia cordata</i>
Chestnut (sweet)	<i>Castanea sativa</i>	Maple (field)	<i>Acer campestre</i>
Chestnut (horse)	<i>Aesculus hippocastanum</i>	Maple (Norway)	<i>Acer platanoides</i>
Cherry (wild)	<i>Prunus avium</i>	Poplar (white)	<i>Populus alba</i>
Cherry (bird)	<i>Prunus padus</i>	Oak (sessile)	<i>Quercus petraea</i>
Cherry (Japanese)	<i>Prunus serrulata</i>	Oak (pendunculate)	<i>Quercus robur</i>
Cherry plum	<i>Prunus cerasifera</i>	Rowan/mountain ash	<i>Sorbus aucuparia</i>
Leyland Cypress	<i>X Cupressocyparis leylandii</i>	Sycamore	<i>Acer pseudoplatanus</i>
Elm (English)	<i>Ulmus procera</i>	Weeping willow	<i>Salix chrysocoma</i>
Elm (wych)	<i>Ulmus glabra</i>	Whitebeam (Swedish)	<i>Sorbus intermedia</i>

17. Measurement of the existing height above ground level of the first significant branch and the direction of growth and the height of the canopy. This informs ground clearance, crown/stem ratio and shading.
18. The stem/trunk diameter is measured with a diameter tape at 1.5m from ground level around the stem for single stem trees and for multi-stemmed trees and other variants in accordance with Annex C of the British Standard. Where access restricts measurement of the tree, an estimate has been made, denoted by '#'.
19. Canopy spread is measured with an electronic distometer. The close-spacing of some of the trees impeded measurements of canopy spread and height and estimates were made.
20. The age of the tree is based on the typical longevity of the particular tree species. The age classes are: young (Y), semi-mature (SM), early mature (EM), mature (M), over-mature (OM) and veteran (V).
21. The physiological condition of the tree is an assessment of its likely health, vigour and stress. The classes for physiological condition are: good, fair, poor and dead.

22. Structural condition includes tree form, visible defects, irregularities and influencing factors.
23. Preliminary management recommendations note work (with prior approval where necessary) to promote the health and longevity of the tree and/or improve safety and/or increase habitat potential.
24. The life expectancy (life exp.) is the estimated remaining contribution in years, (<10, 10+, 20+, 40+).
25. The retention category (ret cat) for each tree is assessed in accordance with BS 5837: 2012 Table 1, summarised as below:

Category A	Trees of high quality with an estimated remaining life expectancy (ERC) of at least 40 years. Green canopy outline on plan.
Category B	Trees of moderate quality with an estimated ERC of at least 20 years. Blue canopy outline on plan.
Category C	Trees of low quality with an ERC of at least 10 years, OR young trees with a stem diameter below 150mm. Grey canopy outline on plan.
Category U	Trees 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 unsuitable for retention. Dark red canopy outline on plan.

26. Sub- categories of 1, 2 or 3 are included in the tree data tables and are defined as follows:

Sub-category 1 trees are those with 'mainly arboricultural value'

Sub-category 2 trees are those with 'mainly landscape value'

Sub-category 3 trees are those with 'mainly cultural or conservation value'.

27. The root protection area (RPA) in m² is for layout purposed and indicates the 'minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority'. The RPA is calculated in accordance with BS 5837: 2012 Annex D. Where Site features are likely to have distorted the typical RPA, a polygon of the same area is estimated on plan to reflect a more realistic shape, in accordance with the British standard.

Tree data

28. The following schedule contains the tree data obtained on site:

Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physio logical	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T1	Ash	M	18	1.5	Not meas-ured	450# 200#	113	N 6# E 6# S 7# W 6#	Good	Fair#. Good crown. Beside Hunsworth Beck. Access limited.	None at present. Monitor for ash dieback.	20+	B 2
T2	Oak	M	15	1.5	Not meas-ured	500#	113	N 5# E 5# S 5# W 5#	Good	Fair#. Good, dense crown. Access and visibility obscured by vegetation. Beside Hunsworth Beck and T3.	None at present.	20-40+	B 3
T3	Goat willow	M	15	1	Not meas-ured	500#	113	N 5# E 5# S 5# W 5#	Fair	Fair. At least three large branches above 2m. Access and visibility obscured by vegetation. Beside Hunsworth Beck.	None at present.	10+	C 3
T4	White willow	M	14	Not meas-ured	Not meas-ured	500#	113	N 5# E 4# S 8# W 4#	Fair	Fair#. Leaning south. Torn limb sockets. Located beside watercourse.	None at present.	10+	C 3
T5	Hawthorn	M	6#	1	Not meas-ured	200#	18	N 3# E 3# S 4# W 4#	Fair#	Fair#. No close access due to cattle. Appears well-balanced with a good crown.	None at present.	10-20+	B 3
T6	Goat willow	M	8	GL	Not meas-ured	300 at base	41	N 5 E 5 S 5 W 5	Good	Fair. Multi-stemmed shrubby tree with s dense canopy.	None at present.	10+	C 3
T7	Hawthorn	M	8	<1	<1	200	18	N 3 E 3 S 3 W 3	Fair	Fair. On the fenceline with an elder intertwined. Multi stem. Some thinning of outer foliage evident	None at present.	10-20+	B 3
T8	Hawthorn	M	8	<1	<1	225	23	N 6 E 5.5 S 5 W 4.5	Fair	Fair. On fenceline. Typical dense habit.	None at present.	10-20+	B 3

Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physio logical	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T9	Hawthorn	M	7	1	<1	400#	72	N 3.5 E 3.5 S 3.5 W 3.5	Good	Good. In between two fences. Large hole at the base of the tree and other smaller holes.	None at present.	20+	B 3
T10	White poplar	M-OM	15	<1	<1.5	670 200	222	N 10 E 6.7 S 6 W 6	Good	Fair. Large tree with a kinked stem. Branch pruned beside fence with a large pruning wound.	Monitor prune wound for decay.	10+	C 3
T11	Hawthorn	M	6	<1	<1.5	275 at base	34	N 4.5 E 4.5 S 4.5 W 4.5	Fair	Fair. Growing from the base of an old rubble stone wall with a fence on top. Multi-stem tree.	None at present.	10-20+	C 3
T12	Sessile oak	M	7	2	2	570	150	N 2.9 E 7.1 S 5.8 W 3.3	Fair	Fair – poor. Badly damaged trunk with decaying heartwood and hollowing. Small, dense crown. Tight fork with main stem and smaller dead stem. Small, squat tree.	None at present.	20+	B 3
T13	Hawthorn	M	8	1.6	1m E	425	81	N 5.2 E 5 S 4.5 W 3	Good	Fair. Growing at the back of the road verge on a short slope against a fence. Old tear-outs and badly pruned stubs.	None at present.	20+	B 2
T14	Sycamore	M	18	3+	Not measured	275 275 (300)	72 min	N 5.2 E 5 S 4.5 W 3	Good	Fair. At the roadside just inside the Site. Epicormic growth. Road edge barrier close to trunk. Larger stem could be a separate tree. On a steep slope.	None at present.	20+	B 2

Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physio logical	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T15	Cherry	M	18	2	Not meas-ured	580	150	N 6.7 E 5.3 S 4 W 4.5	Fair	Fair. Large for species. Ivy obscures base. Roots exposed on grass verge. Prominent location beside Bradford Road.	None at present.	10-20	B 2
G1	Oak Ash Sycamore Hazel Birch	M	To 18	Typ 1.6	Typ 1.6	Typ 300	Typ 41	N 4# E 4# S 4# W 4#	Fair#	Fair#. Trees forming the edge of Hanging Wood on sloping ground. Collective value as a group. Typical broadleaf natives present.	None at present.	20-40+	B 2
G2	Ash Field maple	Y-SM	Typ 8	<1	Not meas-ured	Typ 100	5	N 1.5# E 1.5# S 1.5# W 1.5#	Good	Fair#. Small trees growing on a steep slope along Cliff Hollins Lane.	Monitor ash for ash dieback disease.	20+	C 2
G3	Sycamore Ash	M	Typ 18	Typ 1.8	Typ 2	Typ 375	64	N 7.5 E 7.5 S 7.5 W 7.5	Fair	Fair. Nine trees within the grassed verge of Cliff Hollins Lane on slightly sloping ground.	Monitor ash for ash dieback disease.	20+	B 2
G4	Hawthorns	M	Typ 7.5	Typ 1	Typ 1	200#	18	N 4 E 4 S 4 W 4	Good	Fair. No close access due to cattle. Mostly multi-stem trees with some bark damage and possible ground compaction.	None at present.	20-40+	B 3
G5	Ash	M	Typ 12	Typ 1.5	Typ 1.7	Typ 350	55	N 5.6 E 5# S 5# W 5.5	Good	Fair. Five mature trees on sloping embankment beside the motorway overpass.	Monitor ash for ash dieback disease.	20+	B 2
G6	Swedish whitebeam Hawthorn Goat willow	M	Typ 9	Typ 1	Typ 2m	Typ 300	41	N 4.5 E 4.5 S 4.5 W 4.5	Fair	Fair. Six trees at the end of a tree belt at the Bradford Road junction corner. Collective value.	None	20-40	B 2

Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physio logical	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
G7	Hawthorn	M	Typ 7.5	Typ 1	Typ 1	200#	18	N 4 E 4 S 4 W 4	Good	Fair. No close access due to cattle. Mostly multi-stem trees with some bark damage and possible ground compaction. Approx nine small trees.	None at present.	20-40+	B 3
G8	Mixed	EM-M	Typ 8	Not measured	Not measured	Typ 175	21	See plan	Fair	Fair. No close access due to cattle. Motorway verge trees for M62 slip road.	None.	20-40+	B 2
G9	Willow Poplar Hawthorn Mixed	M	Typ 8	<1	<1.5	Typ 200	18	See plan	Fair	Fair. Close to Hunsworth Beck. Dense group. Public footpath adjacent. Other native broadleaf trees incl.	None at present.	10-20	C 3
H1	Hawthorn	EM	5	<0.5	,0.5	Typ 50	3	3 to 5m over site	Good	Fair. Collective value as a dense visual screen along the motorway.	None.	20-40+	B 2

Findings

Limitations

29. Limitations to the survey included fences, watercourses and wet ground, steep slopes, dense groundcover and cattle (possibly including a bull). Estimates of tree data were made where access to trees was limited. Should further information be required for the southern area of the Site, livestock may need to be removed temporarily from the Site.

Tree descriptions and recommendations

30. The tree survey revealed a total of fifteen individual trees, nine groups of trees and one hedge.

31. Of the individual trees, ten were assessed as retention category 'B', moderate quality and five trees as retention category 'C', low quality. The hawthorn, oak and sycamore species on site tend to have a longer life expectancy even though they may be of a small size on Site.
32. The tree groups comprise seven retention category 'B' groups and two retention category 'C' groups. The long hedge H1 along the western side of the Site has a collective moderate quality, retention category 'B'. There were no high-quality trees/groups recorded on Site.
33. None of the trees surveyed on Site have been recommended for removal at this stage. Development proposals for the Site should inform an arboricultural impact assessment.
34. Several small goat willows are establishing on the former settlement tanks. Though small at present and less than the 75mm diameter at breast height threshold for surveying, these can grow quickly into small trees.
35. Many tree species are affected by pests and diseases at some point in their lifespan. Usually the tree has defence strategies to counteract or slow decay. However, certain pests and diseases, such as Dutch Elm Disease, pose a more serious threat to life and should be monitored for symptoms. Ash dieback, *Hymenoscyphus fraxineus*, is currently reducing the lifespan of many ash trees across the country and symptoms are best monitored during spring and late summer when leaf production, fall and health can be seen. See www.forestry.gov.uk for more information. Older, mature ash trees may be less susceptible to the disease. Notwithstanding ash dieback, ash trees are naturally prone to shedding the end of branches during stormy weather.
36. Those trees which overhang the public footpath in the north-east of the Site require regular maintenance to maintain access.
37. Visual amenity. The trees on Site are generally of landscape value where more easily visible, or of conservation value where the tree is older and smaller.
38. Potential development should avoid disturbance to the below ground root protection area (RPA) of a tree as well as the above ground stem and canopy. The effects of shading by new buildings can have a detrimental effect on tree health. Drainage, sewerage, attenuation tanks and utility trenches should also avoid RPA's.

39. Higher quality trees (retention categories A and B), particularly, should be retained within a development, though retaining as many trees as possible has many benefits including wellbeing, visual amenity, contributing to sustainable drainage, help in preventing soil erosion and providing wildlife habitats.



Figure 1

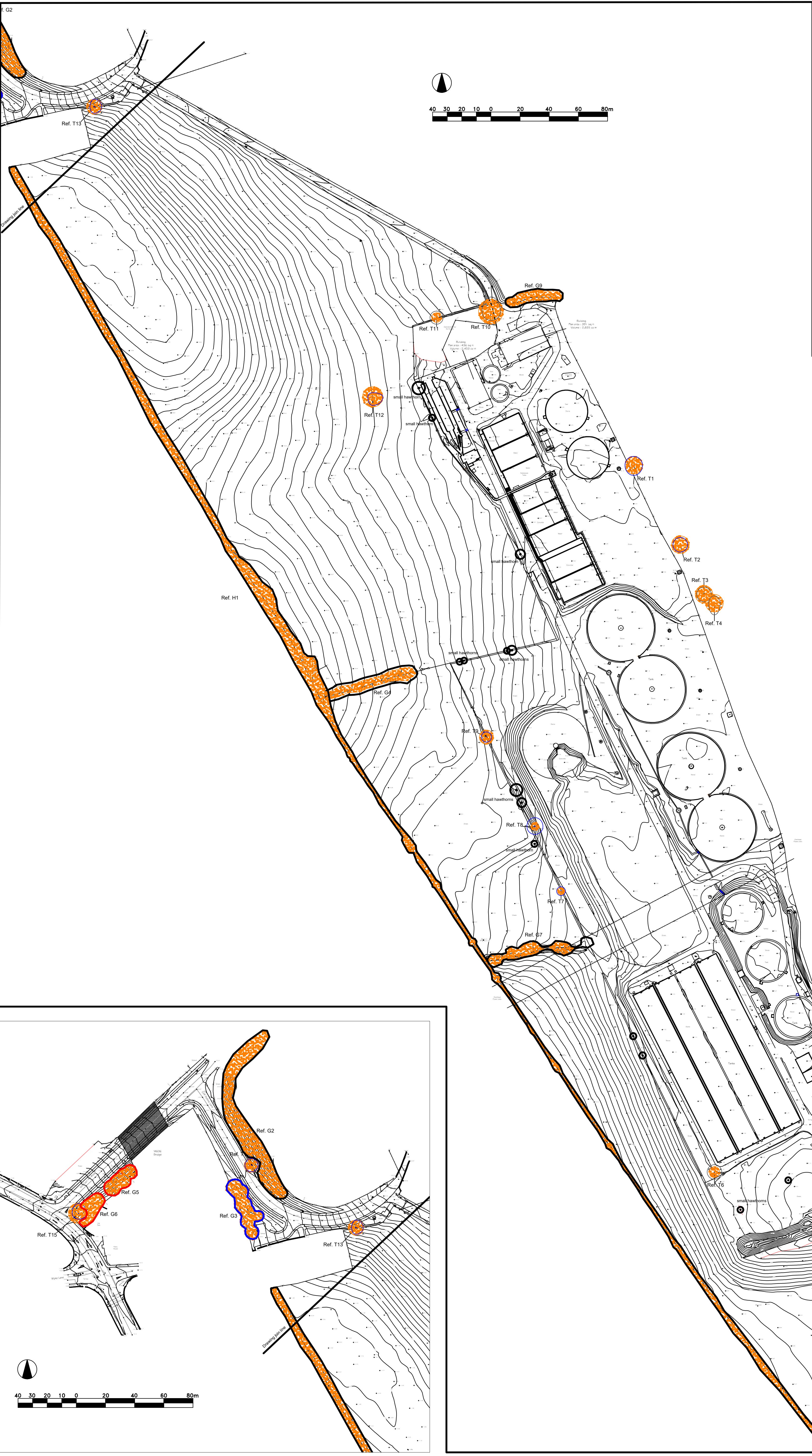
Looking north across the former water treatment works with young goat willow establishing and trees on sloping ground in Hanging Wood to the right. Hunsworth Beck is not visible.



Figure 2

Looking west in the direction of the M606 with overhead power cables across the Site. Tree group G7 is visible beyond the fence in the centre of the figure. A small hawthorn sits on the fenceline to the left.

Appendix 1: DR-4003-01 Tree Constraints Plan



KEY

BS5837:2012 Retention categories:

Retention category A	
Retention category B	
Retention category C	
Category U	
Root Protection Area (RPA)	

Former Water Treatment Works
North Bierley, Oakenshaw

Tree Constraints Plan

Dwg. No. DR - 4003 - 01

Scale: 1:1250 @ A1 Date: Sep 2019

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Grounded advice

