

**Arboricultural Impact Assessment
(including Tree Survey)**

**Land South of Halifax Road,
Penistone**

Report reference: AR-3706-02.01
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Report Title: Arboricultural Impact Assessment (Including Tree Survey)
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Report Reference: AR-3706-02.01

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Summary Statement

The Site is rural, pastoral farmland on a village edge location, adjacent to Halifax Road (A629).

The tree survey comprised eighteen individual trees, of which two are inside the Site and two straddle the Site boundary. The remaining 14 trees are just outside the Site boundary. Five trees are assessed as retention category A (27.8%), five trees as retention category B (27.8%) and eight trees as retention category C (44.4%) including T5 and T13 Elders verging on category U due to late age.

The trees are on the periphery of the Site and only one retention category 'C' tree is identified for removal for the proposed residential scheme. One tree (T4) is considered an intermediate veteran tree, in accordance with the criteria's listed within Defining and Surveying Veteran and Ancient Trees - Neville Fay (2007). It has two to three veteran features: potential rot sites, hollowing and dead branches. This report provides management recommendations for the retention of the existing veteran tree within a residential development.

This report is prepared in support of a planning application submission. The proposed development consists of one hundred and sixty-five residential properties with a new main access road, footpaths, road infrastructure, driveways, three areas of public open space and landscape buffering.

The intermediate veteran tree within the Site should be protected from unwanted damage during and after the residential development in line with policy contained in the National Planning Policy Framework (Feb 2019) which states that 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists'.

The proposed development of housing in proximity to transition veteran trees requires a management plan to avoid or minimise potential damage to persons, property and the trees themselves.

This report should be read in conjunction with the attached Tree Constraints Plan Ref: DR-3706-01.01, Tree Protection Plan DR-3706-02.01 and Tree Survey AR-3706-01.

Introduction

Purpose of the report

1. This report has been commissioned by the client to provide professional independent, detailed arboricultural advice on relevant trees present at land south of Halifax Road at the edge of Penistone.
2. A Planning Layout plan (drawing ref: Rev F-08.03.21) has been provided in DWG format by Sten Architecture to enable an initial impact assessment of the proposed residential works on the existing relevant trees within the Site. The proposals include houses with gardens, access roads, three areas of public open space and landscape buffering.



Impact Schedule

The following schedule identifies the individual tree and its retention category with the main feature(s) of the proposed works likely to cause an impact as based on the Planning Layout plan. The tree references are shown on the tree constraints plan. Any mitigation measures are noted.

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
T1	Rowan	C 2	Plot 49 garden.	Outside Site boundary, canopy overhangs Site and root protection area (RPA) within Site.	Tree protection barrier to BS5837:2012.
T2	Hawthorn and dead elder	C 2	Plot 50 garden.	Outside Site boundary, root protection area (RPA) within Site.	Tree protection barrier to BS5837:2012.
T3	Japanese cherry	C 2	Plot 50 garden. Very close to proposed residential unit	Removal	Mitigation planting required on site.
T4	Ash (Early Ancient Veteran tree)	A 3	Public open space area.	None	Tree protection barrier to BS5837:2012. Tree permanently protected from access with a timber post and rail fence. Please refer to Veteran Tree Management section of report.
T5	Elder	U/C 3	Public open space area.	None	Tree protection barrier to BS5837:2012.
T6	Sycamore	B 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.



Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
T7	Oak	A 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T8	Goat willow	C 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T9	Ash	B 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T10	Elder	C 3	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T11	Ash	B 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T12	Ash	B 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T13	Elder	C 3/ U	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T14	Sycamore	A 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T15	Oak	A 2	Area of public open space.	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T16	Hawthorn	C 2	None	Outside Site boundary.	Tree protection barrier to BS5837:2012.



Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
T17	Hawthorn	B 2	None	Outside Site boundary.	Tree protection barrier to BS5837:2012.
T18	Beech	A 1	Garden areas.	Outside Site boundary. No impact expected as canopy and RPA barely extend into Site.	No protection required.

Implications for retained trees

Tree protection

3. Trees and tree groups should be protected from unwanted damage during construction works with temporary tree protection barriers. The barriers should be erected to the outer edge of the tree canopy or the edge of the RPA, whichever is the furthest away from the tree, unless otherwise indicated on the Tree Protection Plan.
4. Tree protection barriers should be the default specification for protective barriers, Figure 2, BS 5837: 2012 Trees in relation to design, demolition and constructions – Recommendations. Where Site circumstances prevent the use of the default barrier, an alternative specification would be recommended by the project arboriculturist with agreement of the local planning authority. The recommended locations for tree protective barriers are shown on DR-5224-02 Tree Protection Plan, in a magenta line.
5. All-weather notices should be attached to the barrier with words such as: “Construction exclusion zone – no access”.
6. Where facilitation access is authorised within the RPA temporary ground protection should be installed prior to work starting on Site. The temporary ground protection should be capable of supporting the weight of any traffic/machinery using the Site without being distorted or causing compaction to the ground. It is recommended that the ground of the

possible Site compound/storage area is covered in temporary ground protection to minimise soil damage by compaction and conserve soil health through to post-construction planting in this area.

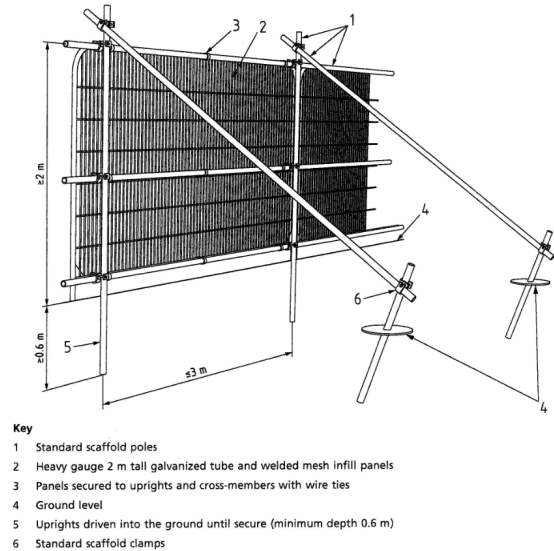


Figure 1

Tree work

7. Where pruning work is necessary of retained trees to enable facilitation works, it should be carried out by a competent contractor in accordance with BS 3998: 2010 Tree Works – Recommendations.

Demolition

8. Demolition is not expected within the proposed Site works.

Drainage and utilities

9. Drainage and utilities are expected to be included within the proposed Site works and should not involve digging or trenching within RPA's.

Trees to be removed

10. One tree (T3) is expected to be removed for the proposed development works.

Mitigation

11. There is opportunity within the scheme to plant trees and enhance wildlife potential. Trees closer to buildings are likely to be small to medium-sized trees, such as: field maple varieties (*Acer campestre* var.), alder varieties (*Alnus glutinosa* var.), serviceberry (*Amelanchier arborea* Robin Hill), birch varieties, hawthorn (*Crataegus monogyna*), holly varieties, crabapple (*Malus* 'Golden Hornet'), Cherry plum (*Prunus cerasifera* 'Nigra').

Intermediate Veteran Tree T4

Natural dieback of veteran trees

12. The intermediate veteran ash tree on Site, T4 has signs of natural dieback and the effects of damage caused by weather. Decay of trees is a normal ageing process¹. Typically, an older, mature tree will naturally retrench by shedding upper limbs

¹ British Standard 3998: 2010 Tree Work – Recommendations.

and focusing energy on progressively lower limbs to form a shorter, squat tree. This process can take several years or decades.

13. It is important that the transition veteran trees are able to shed branches naturally rather than by 'retrenchment pruning' which can accelerate decay, though this type of pruning may be required in certain instances and is discussed further in this plan.
14. Branches shed (or pruned) from the veteran tree provide excellent habitat and replenish soil nutrients as they decay and should be retained *in situ*.
15. Hollowing ash trees often shed major branches but can produce new branches from the outer sapwood to maintain good physiological function to prolong the life of the tree².
16. Mature and veteran trees in particular are sensitive to their rooting environments and are less able to tolerate or adapt to soil compaction, pollution including herbicides and physical damage to roots.

Resolution of potential conflicts

17. The resolution of conflicts between the effects of tree ageing, people and property on Site can be achieved in general by three methods: restricting access to the trees, care of the rooting environment and possible pruning techniques, with annual assessments of the trees.

Restricting access

18. Restricting access into the rooting area or under the canopy spread of a veteran tree (whichever is the greater) can reduce the risk of damage to persons by randomly falling or snagging branches or branches shed during storms.

² Lonsdale. D (ed.) (2013) Ancient and Veteran Trees: Further Guidance on Management. The Tree Council, London.

19. A typical means of restricting close access to veteran trees is by the erection of a timber post and double or triple rail (Figs. 1 and 2) at a distance of no less than 15 metres from the stem (trunk) and this is recommended for each veteran tree on Site. This type of fence whilst being a barrier, is suitable for a residential setting in this locality.
20. Weatherproof signs should be attached to the fence with the words 'No Entry'. In addition it is recommended that an information board is provided illustrating the ageing signs of trees (such as shedding branches, fungi, cavities) and habitats for wildlife.
21. Any fallen branches should be allowed to remain *in situ* within the fenced area to provide decay habitat and nest sites. Any partially snagged branches are likely to require cutting off carefully to avoid swinging.



Figure 1 Typical timber fence to restrict access to trees



Figure 2 Veteran trees surrounded by fencing to restrict access underneath.

Care of the rooting environment

22. Adverse changes to the soil and damage to the tree roots can lead to decline or in extreme cases, instability or death and therefore should be minimised. The following actions are recommended from the outset of work on Site:
- No vehicular movements within at least 15m from each veteran tree
 - No herbicide use within 15m of each veteran tree
 - No toxic materials, fires or storage of materials within at least 15m of each veteran tree

Mulching

23. An area or several areas of ground over the root system within the fenced area may be mulched to simulate organic matter accumulating under the trees. The mulch should be disease-free and contaminant-free wood and bark chips spread to a depth of 80-100mm. Mulching can provide the benefits to the trees of moisture retention, enhancement of soil flora and fauna, improvements to soil texture and nutrient levels. Mulch should be kept away from direct contact with the bark of the trees.

Aeration and decompaction (if needed)

24. If there has been soil compaction within 15m of each veteran tree and is measured at 1.25g/cm^3 or greater, optimal root growth is prevented and soil aeration or decompaction may be required. A percolation test can also be carried out to determine soil compaction. Aeration and decompaction using a compressed-air lance to loosen the compacted soil around tree roots is recommended. Revealing the tree roots can show if any roots are damaged or presence of decay-fungal bodies and advice from an arboriculturist should be sought. The loosened soil can be used as backfill around the roots in combination with a coarse inert material such as pea gravel or horticultural grit enriched with slow release organic fertiliser. The filling material should not be compressed but allowed to settle naturally and topped up to the desired level.

Pruning works (if needed)

25. If dead branches, particularly dead high branches, are posing an unacceptable risk of damage to property or persons, consideration should be given to reducing the risk by careful pruning, to shorten them or remove them, in accordance with the recommendations in BS 3998: 2010 and in particular Annex C Crown management – specialized practices. Annex C includes guidance for retrenchment pruning as a form of crown reduction intended to emulate the natural process of a declining tree, which may need to be phased. It is recommended that the advice of a specialist arborist contractor is sought for the particular circumstances.

Safety planning for tree work

26. Any tree work commissioned should be subject to a Site-specific risk assessment and managed by the use of appropriate safe working procedures. Reference should be made to the Health and Safety at Work Act, Management of Health and Safety at Work Regulations, AFAG leaflets. Tools and equipment needed for all aspects of the work should be checked for safety and should be serviceable and fit for purpose.
27. Extreme caution should be exercised to prevent the introduction of pests and pathogens into the UK on tools and equipment previously used abroad. Measures should be taken to avoid transmission of pests and pathogens from tree to tree and from Site to Site.
28. Prior to any tree work commencing, the tree and its surroundings should be assessed for the presence for protected species (see Annex A BS 3998: 2010), some of which are subject to season-specific legislation.

Crown management

29. If there is an extent of decay or structural weakness, crown reduction should be undertaken as the principal solution. The advice of an arboriculturist should be sought to confirm any necessary action and the method of crown reduction (conventional pruning techniques or retrenchment pruning). The aim of crown reduction is to improve or safeguard the biomechanical integrity of the tree, taking into account its predicted tolerance to pruning and the expected response to the pruning.



30. Extreme crown reduction including topping, is generally undesirable and should only be used as a last resort where retaining a valuable tree would otherwise pose an unacceptable risk to people or property or would be susceptible to loss due to structural collapse.
31. Specialist veteranization pruning techniques to encourage the development of decay and other features of veteran trees are not recommended for the transition veteran trees at this Site.

On-going assessment

32. It is recommended that each tree is assessed by an arboricultural consultant annually for changes in the signs and rate of decline which may require action. In addition, the residents adjacent to the veteran trees should be made aware of the ecological importance of the trees and this management plan.



Tree Survey AR-3706-01 and DR-3706-01.01 TCP



Tree Survey

Land South of Halifax Road, Penistone

Report reference: AR-3706-01
October 2018



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Summary Statement

The Site is rural, pastoral farmland on a village edge location, adjacent to Halifax Road (A629).

The tree survey comprised eighteen individual trees, of which two are inside the Site and two straddle the Site boundary. The remaining 14 trees are just outside the Site boundary. Five trees are assessed as retention category A (27.8%), five trees as retention category B (27.8%) and eight trees as retention category C (44.4%) including T5 and T13 Elders verging on category U due to late age.

The trees are on the periphery of the Site and none are identified as for removal. A large ash in the south-west corner has features indicative of veteran or transition veteran and should be retained and monitored.

This report should be read in conjunction with the attached Tree Constraints Plan Ref: DR-3706-01.

Introduction

Purpose of the report

33. This report has been commissioned by Avant Homes and Yorkshire Land Limited to provide professional independent, detailed arboricultural advice on all relevant trees present at site address.
34. This report has been undertaken in accordance with BS 5837:2012 Trees in relation to construction – Recommendations.
35. The client has provided a topographical plan. The trees outside the Site boundary were not indicated on this plan and estimated positions of these trees were made and shown on the Tree Constraints Plan.
36. 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.
37. 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.
38. 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.

Site description

39. The Site comprises three fields on sloping ground to the south side of A629 Halifax Road, Penistone. To the east of the Site is low density residential development off Wellhouse Lane. The north-east boundary is formed by a steep-sided railway



cutting. Open areas of grassland and scattered trees occupy land to the south of the Site. The Site boundaries are formed by drystone walls, hedging, timber post and rail fence or post and wire fencing. Scattered trees are located to the periphery of the Site.

- 40. Topography of the Site is undulating and sloping generally to the south with the highest ground located near the Halifax Road at the north side of the Site (approximately 233m AOD). The lowest area of the Site is the south-west (approximately 211m AOD). The Site is within a valley situated near the upper part of the south-facing valley slope.
- 41. Mature woodland areas sit to the south-west and west of the Site. The vegetation at the top of the railway cutting, outside the Site boundary, includes trees which slightly overhang the Site boundary in places.

Survey conditions

- 42. The trees were surveyed in sunny, bright conditions on 18th October 2018 following a cold, late Spring and hot summer.

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

- 43. The trees were assessed visually from ground level. Where access to a tree is restricted this is noted in the schedule.
- 44. The tree reference numbers refer to the attached Tree Constraints Plan (TCP) references. The trees were not tagged for this survey.
- 45. 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 avellane</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>
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 (black)	<i>Populus nigra</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>
Leyland Cypress	<i>X Cupressocyparis leylandii</i>	Rowan/mountain ash	<i>Sorbus aucuparia</i>
Elm (English)	<i>Ulmus procera</i>	Sycamore	<i>Acer pseudoplatanus</i>
Elm (wych)	<i>Ulmus glabra</i>	Weeping willow	<i>Salix chrysocoma</i>

- 46. 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.
- 47. 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 '#’.



- 48. 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.
- 49. 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).
- 50. 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.
- 51. Structural condition includes tree form, visible defects, irregularities and influencing factors.
- 52. 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.
- 53. The life expectancy (life exp.) is the estimated remaining contribution in years, (<10, 10+, 20+, 40+).
- 54. 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.

55. 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'.

56. The root protection area (RPA) in m² is for layout purposes 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

57. 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)	Physiological	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T1	Rowan	OM	8	1.8	1.8m N	100 ave x 14	64	N 3.5 E 4.5 S 3# W 3.5	Good	Fair. OSB. M-S. Pruning work, part calloused wounds. Close to stone wall. Good crown.	Protect canopy and RPA with Tree barrier.	10-20	C 2
T2	Hawthorn and dead elder	OM	6	1.8	1.8m N	300 at base	41	N 2 E 3 S 2# W 3	Fair	Fair. OSB. M-S. Within 3m of boundary. Pruning work evident. Dead elder entwined with stems. Top of retaining wall.	Protect canopy and RPA with Tree barrier.	10-20+	C 2
T3	Japanese cherry	M	7	2	2.5m NE	175 125 150 80	34	N 4 E 4.5 S 4# W 4.5	Good	Fair. OSB. M-S. Ascending stems from 1m. Top of retaining wall.	Protect canopy and RPA with Tree barrier.	10-20	C 2



Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physiological	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T4	Ash	OM	18	2	2m S	1220	679	N 9 E 11 S 13.5 W 11.5	Fair	Fair. Largest tree on Site and entering 'Early Ancient' age class for veteran status. Features noted are torn out branches part calloused with cavities; wide bole and root flare (up to 2.5m from stem) with <i>Ganoderma</i> sp.fungal bracket in NE flare in a decayed zone extending at least 30cm towards the tree stem. Likely dieback of NW canopy as no evidence of current season extension growth and dead branch in mid canopy. Stubs with live growth decaying with <i>Daldinia concentrica</i> fungal bodies present. Calloused wounds. Scaffold plank (section of) wedged in fork at about 4m. Short branch stub at union. Thickening of stem at 2-3m with possible adaptive growth for any stem decay. Damaged bark on N side and tractor tracks over roots N side. Young growth inner canopy on older limbs.	Retain for conservation value and NPPF July 2018. On Site boundary. Restrict tractor/vehicle movements over the roots to avoid ground compaction and further root damage. Monitor health and any symptoms of <i>Hymenoscyphus fraxineus</i> (ash dieback). Consider limiting access post-development with a post and rail fence around extent of RPA or further.	40+	A 3
T5	Elder	OM	5	1.5	0.3m NE	70 x6	14	N 2.5 E 2.5 S 2.5# W 2.5	Poor	Poor. Declining – stem between timber pole and stone wall. Stubs below 1m. Stems from GL.	-	<10	U/C 3



Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physiological	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T6	Sycamore	EM	10	1	1.2m NE	325#	48	N 7.5 E 9.5 S 0 W 5	Fair	Fair. OSB. Stem leans N up slope. Bias N. Less branching to S. Minor dead wood lwr canopy. Stem wound at 0.4m part calloused, 20cm long.	Protect canopy and RPA with Tree barrier.	20-40	B 2
T7	Oak	EM	10	1.5	2m NE	380	72	N 5.5 E 4 S 5# W 4.5	Good	Fair. OSB. Good, dense crown. Stem attached to barbed wire fence. Top of steep bank. Pruned branch at 2m – now a dead stub 1m long. Prune wounds mid stem. Fork at 2.5m.	Cut fencing either side of stem. Protect canopy and RPA with Tree barrier.	40+	A 2
T8	Goat willow	OM	10	1.5	2.5m E	275 250 x3 125 x4	137	N 7.5 E 7 S 7# W 5#	Fair	Fair. OSB. M-S. Stems splay out from GL. Stubs and dead wood in central canopy. Lower down bank. Overhangs Site by 2m approx..	Protect canopy and RPA with Tree barrier.	10-20	C 2
T9	Ash	M	11	1.81	2m E	200 300	64	N 2# E 7 S 4# W 4#	Fair	Fair. OSB. M-S. 3 stems from GL. Stem wound on one from GL to 1m. Dead wood lwr canopy (Typical). Overhangs Site by 2.7m.	Monitor for <i>Hymenoscyphus fraxineus</i> . Protect canopy with Tree barrier.	20-40	B 2
T10	Elder	M	5	1	1.8m E	100	5	N 2.5 E 1.5 S 1.5 W 1	Fair	Fair. On the Site boundary fence. Restricted growth W next to a shrubby hawthorn. Stem leans through fence.	-	10-20	C 3
T11	Ash	EM	11	1	?	200 225 x2 #	64	N 3# E 7 S 5# W 6#	Good	Fair. OSB. 3 stems splay out from GL Undergrowth - difficult to survey. Overhangs by 2.5m.	Protect canopy and RPA with Tree barrier.	20-40	B 2



Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	RPA (m ²)	Canopy spread (m)	Physiological	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T12	Ash	EM	11	1	?	200	18	N 6# E 5# S 1 W 6#	Good	Good. OSB. Slightly kinked stem at base. Calloused wounds. Not yet overhanging Site boundary. Close to T11.	-	20-40	B 2
T13	Elder	M	3.5	1	?	75 x7	18	N 1.5 E 2 S 2 W 1.5	Fair	Fair. OSB. M-S. Rounded crown. Overhangs Site by 1m.	Protect canopy and RPA with Tree barrier.	<10	C 3/ U
T14	Sycamore	M	15	1.8	2m SE	600#	163	N 7# E 7# S 7# W 7#	Good	Good. OSB, Good, stout stem. Balanced and dense crown. Does not overhang Site. 11m from Site boundary.	-	40+	A 2
T15	Oak	M	16	1.8	2m NE	275 x3 450 300 200 200	255	N 8 E 8 S 11 W 9#	Good	Good. OSB. M-S. Dead stub at 1.8m-decaying. Stubs in canopy. Good, domed canopy. Overhangs Site by 2.1m.	Protect canopy and RPA with Tree barrier.	40+	A 2
T16	Hawthorn	M	5	1	0.2m W	140 200# 140 150 75	55	N 3.5# E 3.5 S 1 W 3	Fair	Fair. Beside stone wall. Pruned branch at 1m (may have failed). Dieback at top and E side. Sheep rubbing on lower stem.	Protect canopy and RPA with Tree barrier.	10-20	C 2
T17	Hawthorn	M	5	2	2m NW	200 x3 100	64	N 4 E 4 S 4# W 2.5	Fair	Fair. OSB. M-S plus an adjacent hawthorn. Stub at 1m with regrowth. Overhangs by approx. 1m. Fruiting well.	Protect canopy and RPA with Tree barrier.	20-40	B 2
T18	Beech	EM	5	1.8	?	175#	14	N 2.5# E 2.5# S 2.5# W 2.5#	Good	Good. OSB. In rear garden of residential property. Small tree with good growth potential.	Protect canopy and RPA with Tree barrier.	40+	A 1

Findings

Tree descriptions and recommendations

58. The tree survey comprised eighteen individual trees, of which two are inside the Site (T5 and TT16) and two straddle the Site boundary (T4 and T10). The remaining 14 trees are just outside the Site boundary.
59. Five trees are assessed as retention category A (27.8%), five trees as retention category B (27.8%) and eight trees as retention category C (44.4%) including T5 and T13 Elders verging on category U due to late age.
60. The trees on Site should be retainable within development of the Site due to their peripheral location.
61. Recommended tree works include light pruning works to remove dead branches, which will require owner permission for trees outside the Site boundary, and monitoring of ash trees for symptoms of ash dieback.
62. The largest tree in the survey and within the Site, T4 ash, has features which indicate that it qualifies as an early ancient tree or fully mature transition veteran which should be retained within development under National Planning Policy Framework 2018. Features present on T4 include rot site, dead branches, live stubs and fungal fruit bodies (Figures 1-3). Although a section of root flare is hollow with decay, this decay may not have reached the main stem. The stem shows slight adaptive growth (thickening of the stem) at 2-3m which may suggest decay here. Typical practice for retaining trees in the late maturity/early ancient phase safely within development is to limit close access with a local type of fencing or walling around the extent of the root protection area or canopy extent, whichever is the greater. This tree should be monitored annually. Further ground compaction around the RPA, changes of level and development within the RPA should be avoided.
63. Several trees are located just outside the Site boundary though canopies and RPA's may extend into the Site. Protection from damage should be given to these trees, particularly T15 oak, close to the western Site boundary, which is assessed as retention category 'A' (Figure 4). Protection would include tree protection barriers around the RPA or canopy, whichever is the greater, during construction. Buildings and changes to ground level should be avoided within the RPA also.



64. Hedges are located to the southern periphery of the Site and comprise hawthorn with small amounts of holly and elder. These appear to be trimmed to between 1.8m and 1m height annually. These hedges have gaps, particularly near T4.
65. The trees on Site are generally of landscape value (category 2) owing to the open visibility of the Site and locality. Tree T4 ash, and to a lesser extent, T5 elder, T10 elder have mainly conservation value (category 3) for their habitat quality.



Figure 2

The northern side of T4 ash (with woodland outside the Site boundary in the background). Decline in part of the crown is evident.

Figure 3

The wide root flare of T4 ash includes decayed wood with a small fungal bracket of *Ganoderma* sp. at ground level and possible rotted older brackets. The decay extends at least 30cm from the dark area towards the stem.



Figure 4

T4 ash with a stub of naturally fractured branch and live growth. Branch fungus *Daldinia concentrica* is evident on the underside.

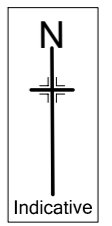
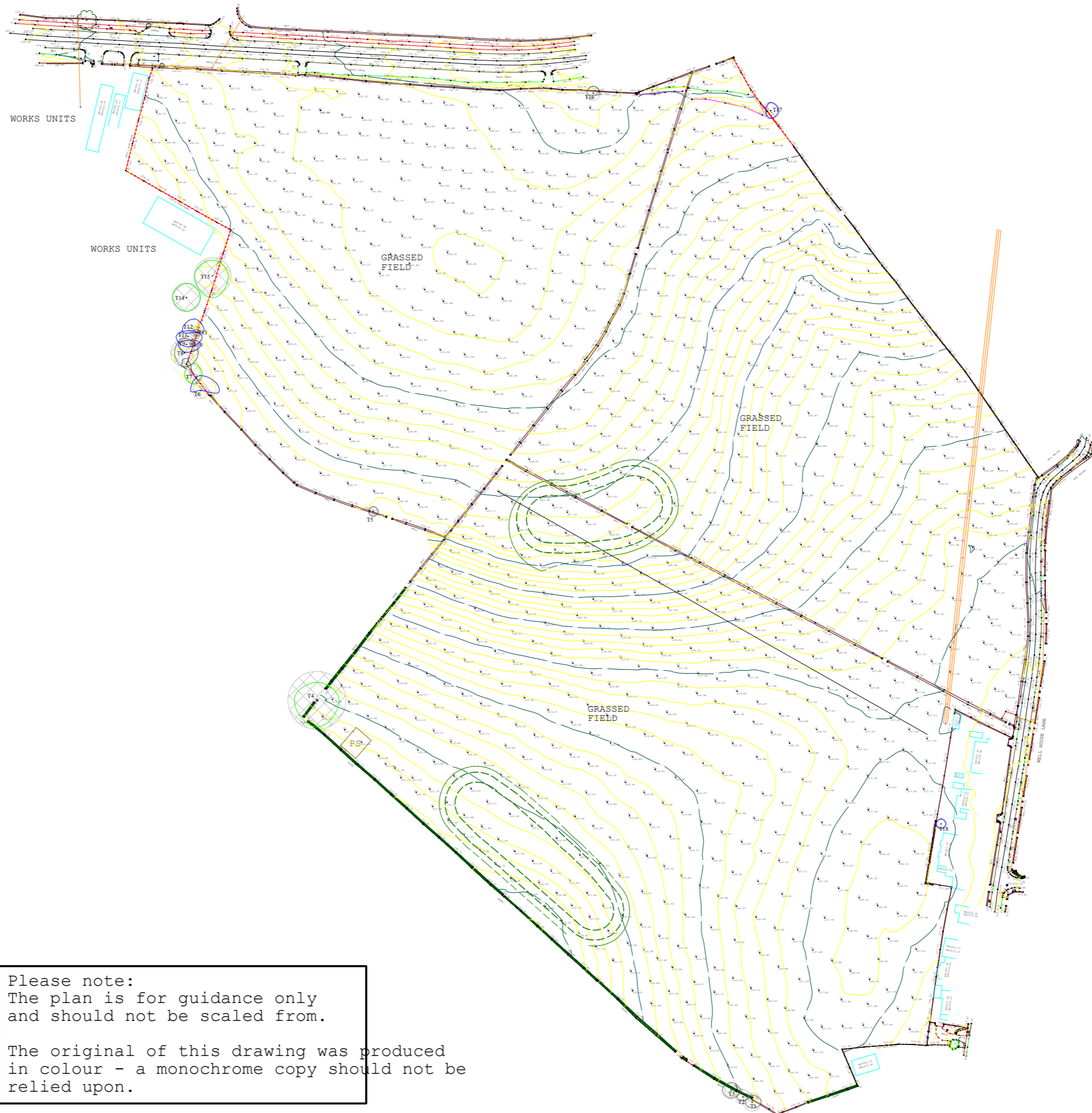


Figure 5

T15 oak located just outside the Site boundary fence and overhanging the Site. This tree should be protected from damage during development.



DR-3706-01 Tree Constraints Plan



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DR-3706-01.01 - TREE CONSTRAINTS PLAN

Site: Land South of Halifax Road, Penistone.

Paper Size: A1 Scale: 1:1000

BS 5837: 2012 Retention Categories

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	ROOT PROTECTION AREA
	TREE STEM

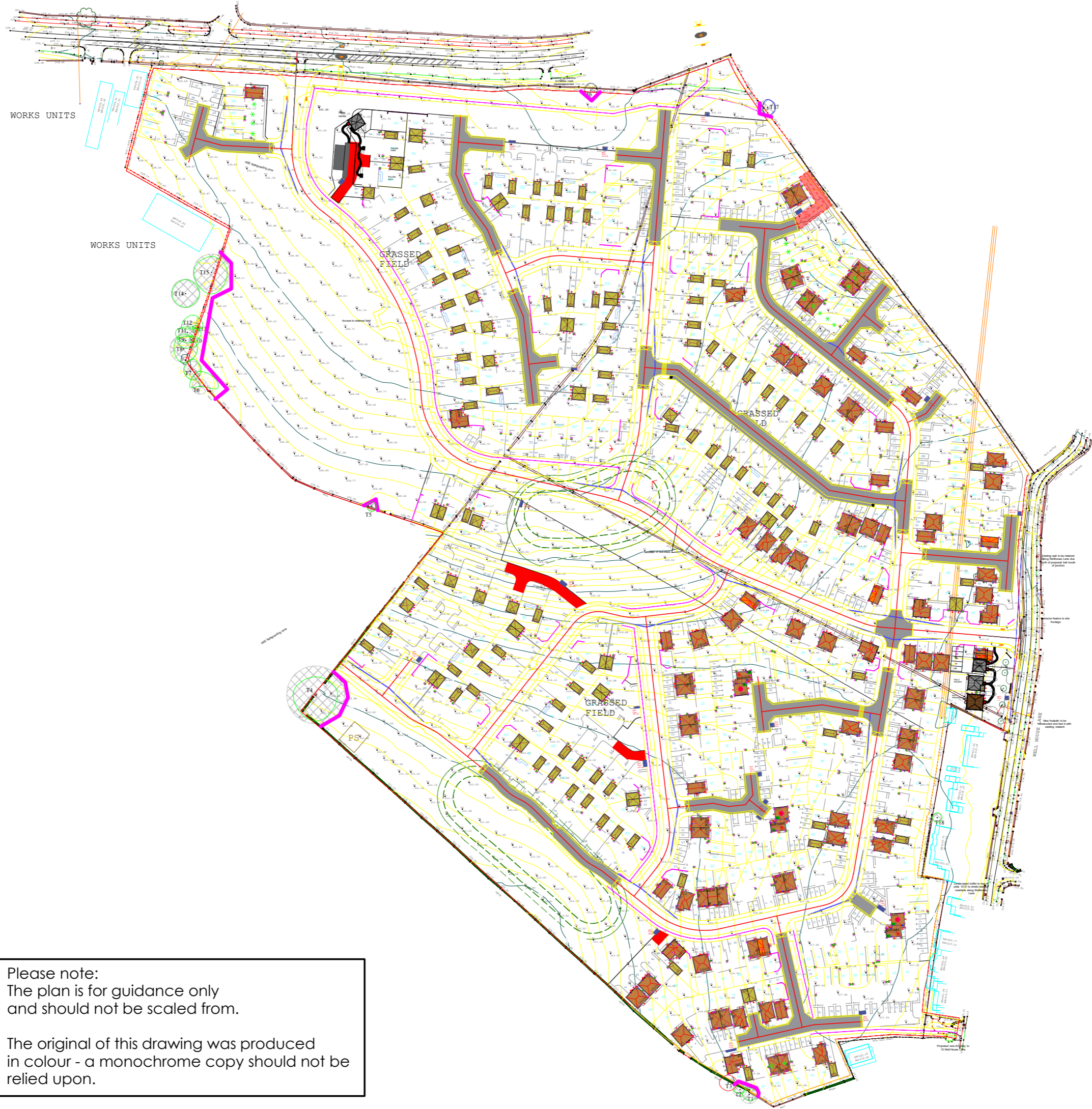
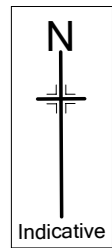
Please note:
 The plan is for guidance only
 and should not be scaled from.

The original of this drawing was produced
 in colour - a monochrome copy should not be
 relied upon.





Appendix 2: DR-3706-02.01 TPP



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DR-3706-02.01 - TREE PROTECTION PLAN

Site: Land South of Halifax Road, Penistone.

Paper Size: A1 Scale: 1:1000

BS 5837: 2012 Retention Categories

	Tree to be retained
	Tree to be removed
	Protective fencing in line with BS 5837:2012

	ROOT PROTECTION AREA
	TREE STEM

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