Rochdale & Littleborough Flood Risk Management Scheme - Phase 1a

DOC 12 - Arboricultural Method Statement

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Rochdale & Littleborough Flood Risk Management Scheme - Phase 1a

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
PO1	08/02/2021	For Review and Comment	DK	EA	EA	PT

1. Introduction

Jacobs was commissioned by the Environment Agency to undertake an Arboricultural Method Statement (AMS) for the Rochdale and Littleborough FRMS. It has been compiled to help ensure the successful retention of the trees on site during the proposed development.

2. Purpose

This AMS describes how trees and hedges should be protected and managed during construction and provides proposals developed by Jacobs in conjunction with the principal contractor to address how works will be undertaken where features have been deemed as needing protection.

The AMS aims to identify all demolition/ construction and reinstatement operations anticipated to be required and provides a precautionary approach towards tree protection, both above and below ground, and forms a standard element of the British Standard framework relating to trees and development/construction.

Integral to achieving this goal is the implementation of generic protection measures and site-specific measures prior to and during the construction period.

This AMS developed by Jacobs is based on the information available at the time of planning submission, supplemented by post consent discussions with the principal contractor.

The AMS will be implemented throughout the construction of the scheme; where required, advice would be provided by a suitably qualified Arboricultural specialist.

3. References

This document is to be read in conjunction with the following:

- Tree Protection Plan drawing numbers:
  - INMW000100-JAC-ZZ-4B0-DR-PL-0040 Tree Removals, Retention and Protection Plan Sheet 1 of 3 Gale
  - INMW000100-JAC-ZZ-4B0-DR-PL-0043 Tree Removals, Retention and Protection Plan Sheet 2 of 3 Todmorden Road
  - INMW000100-JAC-ZZ-4B0-DR-PL-0044 Tree Removals, Retention and Protection Plan Sheet 3 of 3 Riverstone Bridge
- General Arrangement drawing numbers:
  - INMW000100-JAC-ZZ-4B0-DR-PL-0007 General Arrangement – Engineering Sheet 2 of 4 Gale (No drawing is provided showing reinstatement of the Gale West working area, as the ramp will be removed and reinstated during Ph1B works, which are subject to a future planning application. This drawing shows the Gale West area at completion of the temporary enabling works)
  - INMW000100-JAC-ZZ-4C0-DR-PL-1001 DoC13 Gale East Landscape Plan and Details
  - INMW000100-JAC-ZZ-4F0-DR-PL-1001 DoC13 Riverstone Bridge Landscape General Arrangement
  - INMW000100-JAC-ZZ-4F1-DR-PL-1001 DoC13 Peel Street and Foam Converters Landscape Plan and Details.
- BS5837:2012 – Trees in relation to design, demolition and construction' (BSI, 2012)
- BS3998: 2010 - Tree Work – Recommendations (BSI, 2010)
- BS8545: 2014 - Trees from nursery to independence in the landscape (BSI, 2014)

Note that Condition 12 (b) requires "Detailed levels and cross-sections to show that any changes in surface levels can be accommodated without compromising retained trees". As no changes in levels are proposed within the rootzone of any tree to be retained, no information is included in respect of this sub-section.

4. Works to Existing Trees

Prior to the erection of protective fencing all proposed tree works (tree removal/pruning) shall be agreed with the construction contract Project Manager (PM) and in consultation with a suitably qualified arboriculturist. Guidance on what features are to be removed/partially removed can be found within the tree protection plan.

Facilitation pruning should be undertaken with the approval of an Arboriculturist, working in conjunction with the Ecological Clerk or Works (ECoW) and follow the guidance within BS3998:2010. A schedule of pruning works should be compiled by the Contractor for approval by the PM.

No works are to be undertaken on trees that are shown to be retained and protected without prior consultation with the arboriculturist and ecologist.

In certain circumstances the Tree Protection Plan (TPP) will show a partial removal of a feature that will also be subject to protective measures. In these instances, upmost care should be taken when removing part of these features both above and below ground.

All proposed tree works should be carried out by a suitably qualified and insured contractor preferably registered with the Arboricultural Association. Tree work should be carried out in accordance with BS 3998:2010 – "Tree Work - Recommendations". No tree pruning shall be undertaken by construction personnel.

Any access facilitation pruning should not have a significant adverse impact on the tree's physiology or amenity value. In some cases, a suitable working space may be provided by temporarily tying back tree branches.

Any tree works undertaken must take account of all protected species of flora and fauna and comply with all appropriate legislation. This includes The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 which provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist should be obtained before undertaking any works that might constitute an offence.

All trees that have been approved for removal shall be cut down to a low stump. Those stumps that are in close proximity to trees but not within the work area shall be left in situ, as their removal may indirectly affect retained trees. Stumps that remain within the work area may be removed with a stump grinder.

The stumps of felled trees not in close proximity to retained trees can be grubbed out via excavator or removed using a stump grinder.

All operations must be carried out to avoid damaging neighbouring retained trees. This includes using excavation/stump grinding plant on the RPA of retained trees.

Trees to be retained must not be used for anchorage or winching purposes.

5. Tree Protection Fencing

Tree protection fencing in accordance with BS5837:2012 (See Appendix A for details) shall be erected prior to the commencement of any of the following activities:

- The delivery of any plant or materials;
- Demolition;
- Soil stripping;
- Construction works;
- Installation of any utilities; and
- Landscape works.

The protective fencing will be erected and installed on the alignments shown on drawing numbers INMW000100-JAC-ZZ-4B0-DR-PL-0040, INMW000100-JAC-ZZ-4B0-DR-PL-0043 and INMW000100-JAC-ZZ-4B0-DR-PL-0044.

The protective fencing shall act as a Construction Exclusion Zone (CEZ) for all works. The CEZ must not be compromised. The following shall apply within these areas:

- No mechanical excavations;
- No excavations by other means without the agreement of the project arboriculturist;
- No change in levels (except removal of grass sward using hand tools);
- No storage of plant or materials;
- No fires or discharge of deleterious materials;
- No storage or handling of any chemicals including cement washings; and
- No vehicular access.

In instances where the Root Protection Areas (RPAs) for retained trees exceeds the perimeter of the tree protection fencing then temporary ground protection shall be installed in accordance with BS5837:2012.

It is envisaged that the locations of the agreed tree protection fencing and/or ground protection may be phased and alignments altered. This will be agreed on site with the PM, advised by the ECoW and the Arboriculturist. However, in the first instance efforts should be made to follow the staging of fencing as shown in the TPP.

Ground protection is to be appropriately load bearing (this may require engineering input) and continue to allow the passage of water and gaseous exchange with the existing ground below.

Existing fencing may be considered as adequate to provide tree protection, this should be assessed by the ECoW with advice from an Arboriculturist and confirmed by the PM.

The Construction Exclusion Zones (CEZ) have been calculated as per BS5837:2012 and are formed around the existing root protection areas. No works or storage of materials is to take place within these areas without being agreed in writing with the ECoW and under advice from the Arboriculturist.

Signs explaining the purpose of the protective fencing (See Appendix B) shall be attached to the fencing at 10m intervals. These signs must be weatherproof and must be replaced as necessary should they be removed or become illegible. Signs should be in clear colours (bold yellow/blue) and should be placed at eye level (approx. 180- 190cm from ground level).

Once erected these areas should be regarded as sacrosanct, and, once installed, barriers and ground protection should not be removed or altered without prior recommendation by the project arboriculturist.

This fencing is to remain in place until (for temporary enabling works in Gale West) the removal of all temporary structures on site, which is not anticipated to occur until the end of Phase 1b of the Scheme, immediately prior to implementation of final landscape restoration; and, for the remainder of the application boundary, until landscape reinstatement of the work areas.

The tree protection fencing will be regularly inspected as part of periodic site inspections by the project ECoW. Any damage to the tree protection fencing will be reported immediately to the PM who will instruct repairs. Condition of tree protection fencing will be one of the matters which the ECoW will include in their periodic reporting to the project team.

6. Site Huts, Storage of Material and Spoil

Temporary site compounds, including mobile WCs and all their service connections, are to be positioned clear of the RPAs of retained trees. The site poster 'Common causes of tree death' (see Appendix C) shall be posted in the site cabin.

The delivery, storage, mixing and discharge of concrete and all other cement-based materials shall be carried out so that there is no run-off and spillage near the RPAs of retained trees. No substances that are potentially injurious to plant tissue (including diesel, bitumen, concrete, mortar and other phyto-toxic materials) shall be stored, discharged, prepared or used, where direct contact, infiltration or run-off might reasonably be considered liable to harmfully affect existing root growth or other parts of retained trees. Where chemicals are stored it is now standard practice to have emergency spillage kits available to minimise the impacts of any accidental spillages to the local environment. All cement mixing, vehicle washing or any other activity where toxic chemicals are used shall have the provision to contain any accidental spillage. This can be achieved using suitable soil bunding or using a supporting timber framework sealed with heavy duty plastic sheeting.

No building materials shall be stored within RPAs of retained trees. Spoil from any site activity, including demolition and any materials from the project designated for re-use, shall either be removed from site; or, if kept on site, shall be stored or piled well clear of RPAs of retained trees.

7. Installation of Underground Services

All underground services should be routed well outside the RPAs of all retained trees as mechanical trenching severs any root present and can adversely affect the local soil hydrology. Where this is not feasible then it is preferable to keep all apparatus in common ducts to minimise disturbance. No underground services are proposed in Gale West. A sewer diversion in Gale East and re-routing of mains services at Riverstone Bridge avoid RPAs of trees to be retained and no other services are proposed.

Provided that roots can be retained and suitably protected (i.e. exposed roots are immediately wrapped or covered to prevent desiccation and rapid temperature change and all wrappings removed prior to backfilling) excavation with hand tools may be acceptable for shallow service runs under the supervision of the project arboriculturist. As noted above, however, no further service excavations are anticipated.

Installation of pipework adjacent to the RPA of trees must avoid the potential rooting area; the sewer alignment proposed achieves this aim. If this cannot be achieved however, excavation shall be undertaken under the supervision of the consultant Arboriculturist. Initial topsoil removal to be undertaken along the edge of the excavation with a vac excavator to remove soil to 1m depth to minimise damage to roots. The Arboriculturist will advise whether the roots may be pruned if below 25mm in diameter, whether they can be practically and safely retained and protected at the face of the excavation, or whether they need to be retained and worked around as would be required of any buried service/utility asset.

Where unforeseen circumstances require that services must pass within the RPA then revised plans showing the proposed route will be drawn up with input from the project arboriculturist.

Where demolition of existing structures in close proximity to retained trees is proposed the work will be undertaken under the supervision of the project arboriculturist as necessary. Locations where this may be required are:

- Gale West: A low dry stone wall and 2no. stone piers running along Todmorden Road pavement (ramp access point) will be dismantled and stored off site for future reinstatement in Ph1B works. Disassembly will occur outside the tree protection zone to avoid risk of damage to roots of trees to be retained. Great care must be exercised to ensure that no parts of the adjacent trees are damaged during this process;
- Riverstone Bridge: Existing road/ pavement surfaces and kerbs off Stubley Mill Road will be removed to allow construction of a new road bridge and pavement.

8. Monitoring

Once the protective fencing and ground protection measures have been installed but prior to the commencement of the development a site inspection should be undertaken by the ECoW with advice from the project arboriculturist. This is to confirm that all protection measures have been installed in accordance with the Tree Protection Plans and method statement.

Regular monitoring visits should be carried out as necessary during the development to include, as a minimum:

- On commencement of piling to establish that piling methods are in line with that outlined;
- On commencement of bridge demolitions and removal;
- On completion of piling;
- At commencement of import of ramp build up materials and prior to the start of compaction activities; and
- At monthly intervals after these activities.

The monitoring visits shall confirm that all protection measures are in place and remain effective. The visits shall also inspect trees that have been retained and are close to the works for signs of damage, stress and instability. The surveyor shall provide a written summary of any remedial action required to be taken to the PM. In case of emergency action needed for health and safety purposes, the surveyor may instruct the person-in-charge to cease work immediately in the vicinity of the affected tree (s), to clear the area of personnel and secure it, pending instructions from the PM.

On completion of the development a general survey of the trees is recommended to identify any remedial action necessary as a result of the works. Note that permission for any additional tree works not included in the original development consent may need to be obtained through application to the LPA.

If any arboricultural issues arise during the development then the site manager should immediately contact the ECoW for the project, who will seek advice from an arboriculturist for advice on how to proceed.

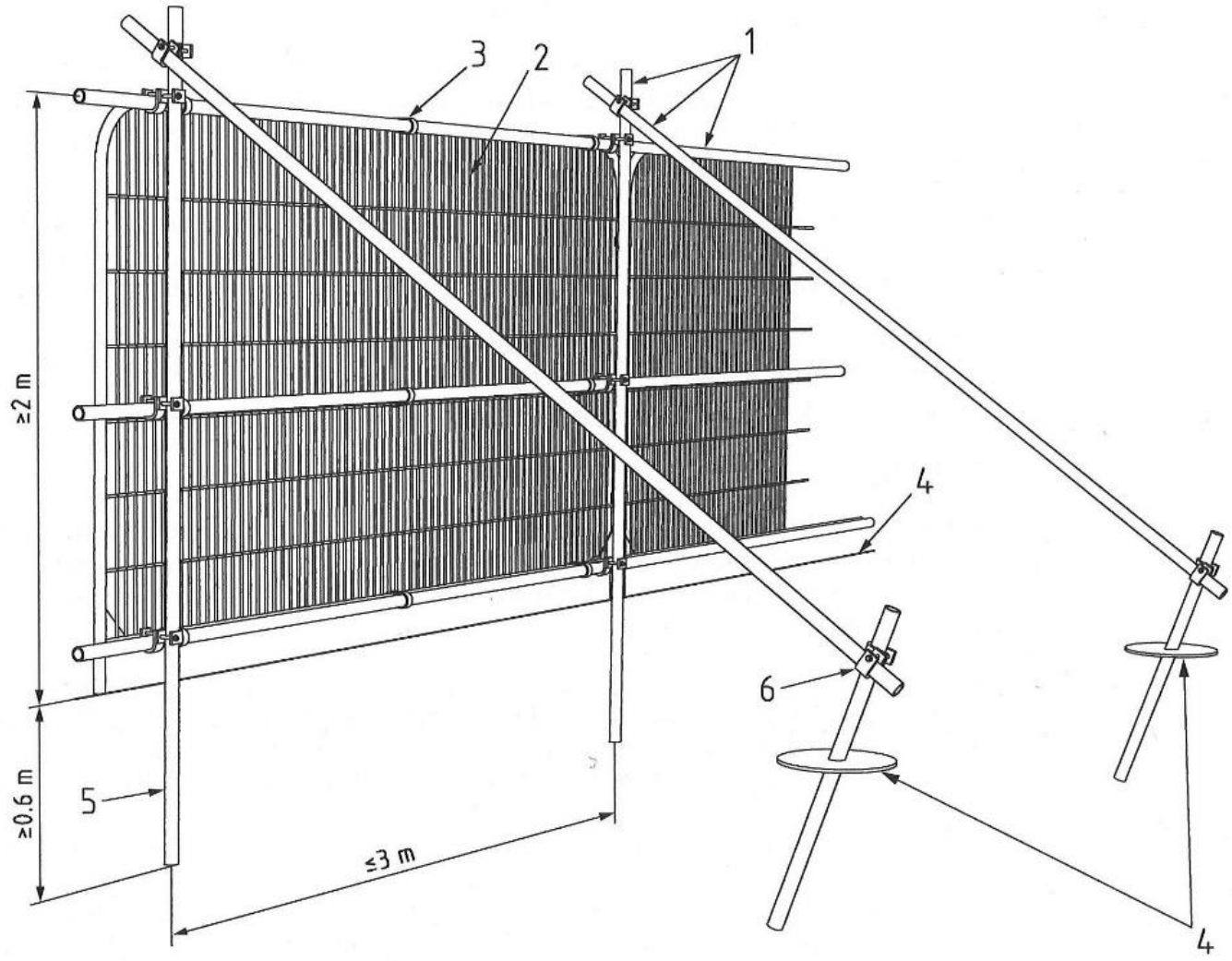
9. Mitigation

A scheme of replacement and mitigation planting will follow construction, as part of the comprehensive landscape scheme that will be implemented following completion of the Phase 1B works. This will be designed by a Landscape Architect and will form part of a future submission to the LPA. This AMS recommends that the Landscape Architect engages in consultation with the appointed tree officer or relevant representative from the Local Authority and the landowner to ensure appropriate species selection.

All new tree planting should be undertaken in accordance with BS8545:2014 Trees: from nursery to independence in the landscape. Planting pits for shrubs or trees must be hand excavated taking care to avoid damage to existing tree roots. If substantial roots are discovered then the planting pit should be relocated if possible in order to retain them. Hedging plants if bare root shall be notch planted and no trench planting shall take place within the RPAs. If fertiliser is to be incorporated into the planting pits it should be a slow release type such as 'Enmag' or other similar approved and should be applied in accordance with the manufacturer's recommendations. The landscape scheme will include natural regeneration at Peel Street in Ph1A and natural regeneration plus planting at Gale West in Ph1B.

Appendix A. Tree Protection Fencing (BS5837 Specification)

Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

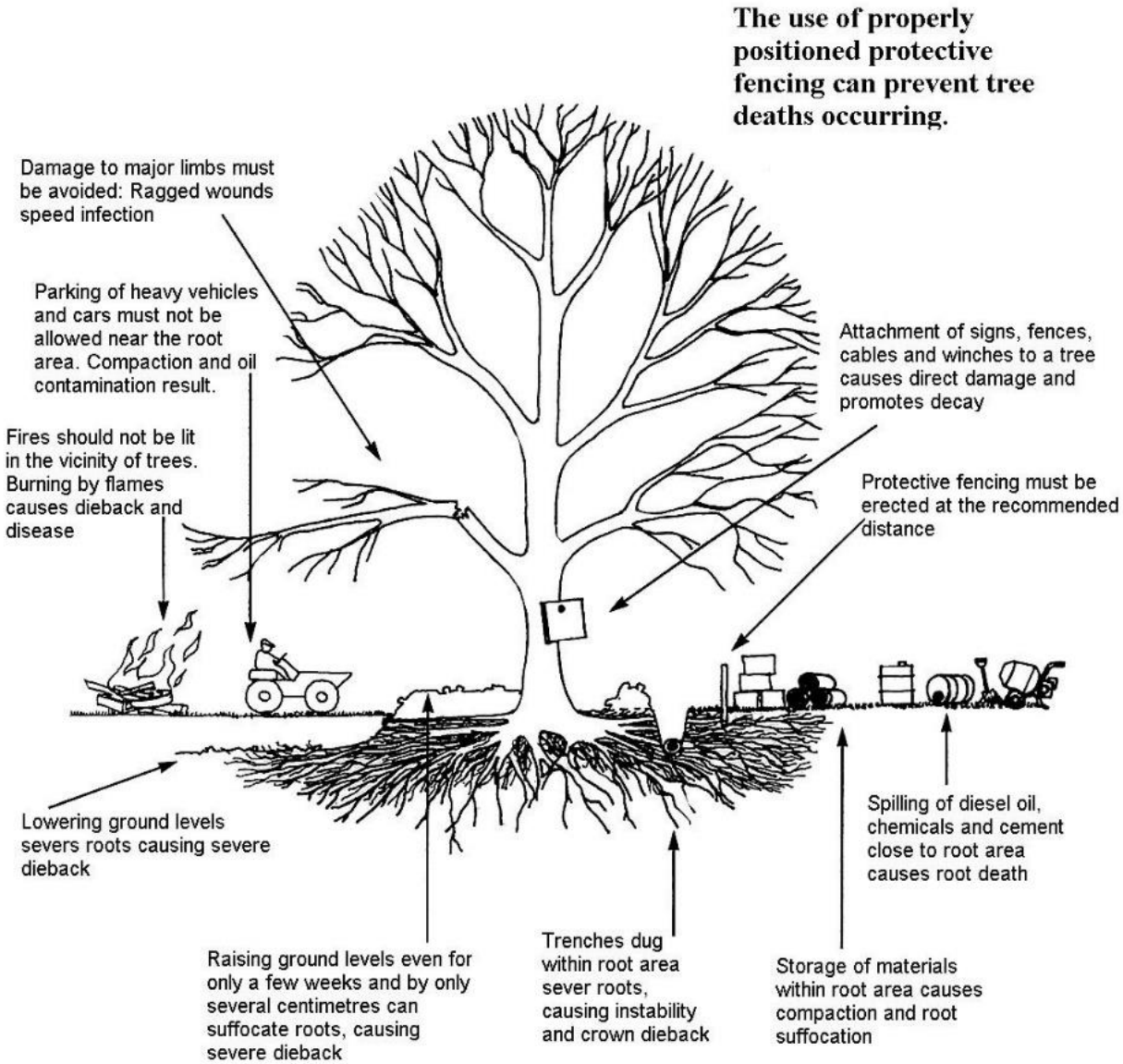
Appendix B. Signage to be displayed on Protective Fencing.





Appendix C. Poster to be displayed in site cabins/depots/welfare units.

Common causes of Tree Death



Please use copies of this as an on-site poster for personnel