

Arboricultural Method Statement

Version 1

Trevor Basin, Llangollen

Prepared for: Canal and River Trust

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Appendix 1 Cellular confinement specification

Appendix 2 Tree Protection Plan

1.0 Introduction

- 1.1 The scope of this report is to provide an arboricultural method statement, specifically in relation to the construction of pathways within a tree rooting zone. To demonstrate the methods for working in or adjacent to root protection areas in order to avoid unacceptable impacts between the proposed design and retained trees and offer a level of protection for those trees that are to be retained on site.
- 1.2 It is important that the guidance in the method statement is followed and understood by all persons involved in the design and construction of the proposed scheme.

2.0 Communication Details, Monitoring and Compliance

- 2.1 It will be the responsibility of the site manager and appointed arboricultural consultant to brief all contractors on site as to the adherence to the arboricultural method statement. A copy of this method statement will be made available to site contractors at all times during the period of development.
- 2.2 A list of site contacts is available to the rear of this document.
- 2.3 All Special Measure Area works (no dig surfacing) shall be fully supervised on site by the arborist.
- 2.4 In order to outline working methods in relation to trees prior to any construction activity on site, a site meeting shall take place between the main contractor and arboricultural clerk of works. The organisations and individuals performing these roles shall be appointed prior to a pre start meeting. A record of the meeting will be taken and distributed to relevant parties and the meeting will confirm the duration of the works and any phasing implications or specific contractor related issues and how they are to be resolved.

The following will be explained at the pre start meeting:

- The central aspect of tree protection on this site is that the area of new surfacing located in protected areas (Special Measure Areas SMA) shall be complete and protected before any other construction works commence thereby avoiding the typical construction related issues such as compaction or direct damage from excavation that occur during site works and prior to new surfacing being installed.
- The Construction Exclusion Zone is purposefully located within the permanent works (dwelling elevation and new surfacing). This is to ensure the SMA

associated with new surfacing remains undisturbed. When the new surfacing is complete the CEZ will be relocated following arborist confirmation. Ground boarding to protect the Special Measure Areas (SMA) will be installed immediately over the new surface and it will be required for the construction duration.

- It is noted that arboricultural input is prior to construction (pre start) and whilst supervision is required throughout the build period all operations in the SMA must be overseen by the arboricultural clerk of works and must be carried out prior to any other works on site unless otherwise agreed with the LPA.
- Seasonally these works shall be carried out when the ground is dry and preferably in summer after which main construction can begin, the purpose of this is to avoid detrimental damage such as compaction of soils caused by traffic in wet conditions.

3.0 Tree pruning

- 3.1 Only tree works permitted and agreed with the subsequent planning permission shall be permitted. Where tree pruning is required in addition to that already specified in the preliminary tree survey schedule, it will be agreed in writing with the LPA Tree Officer prior to commencement.
- 3.2 All arboricultural works shall conform to the recommendations of BS3998:2010 British Standard Recommendations for Tree Work unless otherwise specified.

4.0 Protective barrier

- 4.1 Before commencing any site works Construction Exclusion Zones (CEZ) will be constructed in line with the Tree Protection Plan (TPP) and specification for the CEZ contained within the plan.
- 4.2 The protective barriers will be constructed to the specification as detailed in BS 5837:2012 and consist of a 2m high steel mesh panels (Heras panels) secured to the ground via rubber feet and metal stakes. The fencing will be secured by uprights driven into the ground to a minimum depth of 0.4m. Please refer to Appendix 2 showing a detailed specification for the construction of the barrier fencing within the Tree Protection Plan.
- 4.3 All weather notices will be secured to the barriers showing the following wording: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

- 4.4 Once installed all fencing will be inspected by the consulting arboriculturist and signed off as secure prior to any works.

5.0 Additional precautionary measures

- 5.1 Plant and materials will be stored in designated areas outside the CEZ.
- 5.2 Movement of cranes on site will be conducted under the supervision of a banks man to ensure that a suitable distance is maintained from trees on site.
- 5.3 Materials will be stored in such a way that if spillage did occur no chemicals would leach into the CEZ.
- 5.4 Wash points for tools and equipment will be placed outside of the CEZ. When determining the proposed location for wash point's consideration will be given to the design of the station to ensure that run off does leach into the RPA.
- 5.5 Fires on site will be no be permitted

6.0 Method for new hard surfacing and construction

- 6.1 The new hard standing proposal crosses the RPA of retained trees RPA and therefore the proposal is to be constructed by the use of a no dig method as detailed in BS5837:2012 Trees in relation to design, demolition, and construction recommendations subsection 7.4.2. As a result of this measure the TPP has a designated Special Measure Area (SMA) where the new surface shall be laid.
- 6.2 The design will consist of a three dimensional cellular confinement system (cross section detailed in Appendix 1 and will be employed as a sub-base to a depth suitable for pedestrian use. The cellular system will be laid onto a geotextile membrane in order to prevent pollution contaminating the rooting area. The cellular structure is then expanded and pinned in place using steel rods and back filled using an angular aggregate that contains no fines.

Note: The infill aggregate must not contain any fines as these become compacted overtime and reduce water infiltration. The recommended size of aggregate is 20-40mm in diameter.

- 6.3 In order for the system to allow for gaseous exchange and water infiltration the finished surface treatment will be permeable to allow for water infiltration. In such cases where vehicles or pedestrians are intending to use the new driveway the use of permeable resin bounded gravel would be recommended. (Hoggin or self-binding gravel will not be used as they compact easily and prevent water infiltration)
- 6.4 The finished permeable surface will be protected during construction works in order to prevent the interstices from becoming blocked by excessive construction debris.
- 6.6 Where ground vegetation is present and requires removing in order to construct the cellular system the vegetation will be cleared using hand tools only.
- 6.7 Where the topography of the ground is such that required levels are not met for installing the cellular system, the levelling of the area can be achieved by using sharp sand in order to create an even surface.

Note: Builders sand is not to be used to create a level surface due to the high salt content.

- 6.8 Consideration will be given to ground conditions at the time of installation as during the winter months the ground is more likely to be saturated leading to an increased risk of compaction.
- 6.9 The operator will take care not to place an exaggerated angular force on the cellular system when filling with the aggregate to prevent compaction and smearing of the soil subgrade layer.
- 6.10 The granular infill will be spread using hand tools and be loaded from outside the area of works. Machinery will only access the cellular system once a suitable area has been prepared by hand in order to prevent compaction and damage to the cellular system.

Note: a single passage of machinery over a root protection area can cause irreparable damage to tree roots, 90% of which are located within the top 400mm of the soil.

7.0 Edge supports

- 7.1 Edge supports will consist of a peg and board system. Where a more stable option is required, railway sleepers may be used and secured in place by steel pins. Excavation

will not take place in order to secure edging or kerbing in place due to the damage caused by root severance.

8.0 Services within the RPA

- 8.1 At present there are no plans for services in the RPA of retained trees. Where there is a need to route services with an RPA technical design, plans will be produced in association with the arboriculturist to ensure that the least destructive path is identified. Specialist equipment (ground penetrating radar) may be required in order to accurately map the root system to ensure that the route of least impact is found. It is preferable that where the need to route services through a trees rooting zone, all apparatus will be located together in common ducts. Inspection chambers will be located outside of the RPA.

Note: The desired option will always be to route the proposed new services away from the RPA due to the high probability of significant damage occurring to tree roots.

- 9.2 The favoured method of insertion for services is a trenchless insertion method which differs on the requirement of the utility apparatus and includes micro-tunnelling, surface launched directional drilling, pipe ramming and impact moling. Where any of these methods is utilised then the entry and retrieval pits will be located outside of the RPA.

Ref: Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook

- 9.3 Any roots un-earthed during the excavation are to be pruned in accordance with British Standard BS5837:2012. Pruning of roots in excess of 25mm is to be agreed with the LPA's Tree Officer and pruning is to be carried out under supervision of the consultant arboriculturist. Exposed roots not to be pruned are to be covered immediately in order to prevent desiccation and to protect from rapid changes in temperature. All protective materials shall be removed prior to infilling with topsoil; care will be taken to ensure that no contaminated material is introduced into the excavation.

10.0 Contact details

10.1 The following list details key project consultants and officers who can provide appropriate advice on arboricultural matters relating to the above project.

Site manager:

Site supervisor:

Arboricultural consultant:

Amenity Tree Care Ltd
Burwardsley
Chester
Tel: 01829 770075

Tree officer (Wrexham Council):

Planning officer (Wrexham Council):

Please do not hesitate to contact me should you require further assistance.

Yours sincerely



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Managing Director

Appendix 1

Cellular confinement specification

