

Arboricultural Report BS5837 (2012) Anzio Camp

Trees in relation to design, demolition and construction

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This report demonstrates how trees and vegetation have been considered throughout the design process of a planning proposal by Landscape Matters for the site, Anzio Camp.

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1. Introduction

1.1 This report considers the arboricultural related planning considerations at Anzio Camp site, Tittesworth, Leek. This report has been produced in accordance with BS5837 (2012). It updates the report submitted in 2012 in support of a previous planning application which was itself an addendum to an earlier comprehensive report undertaken in 2007 by Hulme Upright Manning (referred to as the 'core document'). Although the original report was comprehensive, it was undertaken to BS5837 (2005) Trees in Relation to Construction. This British Standard has now been superseded by BS5837 (2012) Trees in Relation to Design, Demolition and Construction.

This document contains original data re height, DBH and crown spread. Due to time scales this information has not been updated but RPA have been produced as raw data and are available when required [RPA = root protection area; *layout design tool indicating 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.*]

BS5837 (2012)

This British Standard provides improved guidance on how trees and vegetation (green infrastructure) can be suitably maintained and integration into the construction environment from inception through to completion. The aim of BS5837 (2012) is to ensure the protection of amenity, i.e., protection and retention of trees which are appropriate for retention and/or mitigation measures to ensure the continuation of tree cover and amenity contribution.

1.2 Methodology

Author

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Dave Frost N.C. Arb. is an arboriculturist who has been Director of Dryad Tree & Woodland Services since 1997, a company which regularly produces reports to the British Standard. He is a fully certified tree hazard assessor. He is also employed by the Peak District National Park Authority as a Tree Officer—a post in which he is responsible for scrutiny of BS5837 surveys and all planning matters relating to trees.

The tree survey and assessment covers 680 trees as individuals and groups. Further peripheral trees on site have not been recorded as they do not come under any influence from development. Latin specifics are given as precisely as possible.

Health of the trees are referred to as good, fair, poor or dying/dead. Details are included where relevant. Structural condition offers background information about the current health of the tree and allows an assessment of the potential future amenity of the tree including ecological or aesthetic value.

The report gives management recommendations including how the tree might contribute to amenity over time periods (less than 10 years, 10-20 years, 20-40 years and more than 40 years).

The quality and value of each tree is classified as per the **Cascade Chart for Tree Quality Assessment** set out in the revised British Standard. Each tree is shown on the accompanying site plan. The colours used as the BS5837 2012.

Light green	Category A	Trees of high quality
Mid Blue	Category B	Trees of moderate quality and value
Grey	Category C	Trees of low quality and value
Dark Red	Category U (formally R)	Trees of removal quality

1.3 This report was commissioned by Enhanced Developments Ltd and undertaken by David Frost of Dryad Tree and Woodland Services for the purposes of providing suitable recommendations regarding the impact on trees of the proposed redevelopment of Anzio Camp site. The report concerns only those trees which may be affected by the redevelopment proposals.

2. Site Considerations

The updated BS3857 suggests that entry into the root protection area (RPA) of any tree is to be strongly discouraged and requires good reason backed up by an individual method statement for each occasion that this has to occur. Section 6.2.1.3 describes the RPAs as sacrosanct, not to be removed or altered without prior recommendation from the project arboriculturist. Section 5.3.1 suggests that the default position is that structures are located outside of the RPAs of trees to be retained. However, where there is an overriding justification for construction within the RPA, technical solutions might be available that prevent damage to the trees. Protection for the trees should be carried out using methods described in Appendix 1 [Barriers and Protection] and maintained. If construction is to occur within the RPAs they would have to be justified by the project arboriculturist and accompanied by an arboricultural method statement for each occurrence.



Footpath and walkways can be permitted within the RPAs as can a limited amount of hard surfacing which must be mitigated by the use of soil compaction and remediation measures such as 3D membranes. The same processes would be required whether the surfaces be temporary or permanent.

Great effort has been taken for construction to remain outside of these RPAs. Infringement on RPAs can have a detrimental effect on the long term health of the trees deemed worthy of retention. It should be noted that some trees have not been deemed worthy of retention due to poor health or damaged limbs that might pose a threat to safety. Other considerations include life expectancy and group value (e.g. removing one tree may affect the safety of another).

One important objective has been to allow for long term growth and unimpeded development of retained trees as groups as well as individuals. This combined with mitigating replacement planting is a responsible and proactive approach to the trees on site.

Very few trees remain from the original military occupation and development post WW2.

This site contains trees which were originally planted for the specific purpose of screening military use. In 1982 a large number of hybrid poplar and willow were planted in lines for screening. These fast growing species would nowadays be considered unsuitable for planting on any site with public movement and occupancy due to their propensity for limb failure. Most of the trees deemed unsuitable for retention in this report are these species.

This situation has been exacerbated since the site was abandoned in 2003. Much suckering and natural regeneration has taken place as would be expected. The poplars and alders in particular have large volumes of suckers particularly in the wetter areas. These suckers are dependent on the original plant and should not be viewed as individuals but part of a system. This would be particularly relevant for post-felling stump treatment using translocated herbicide which could kill the whole system.

The redevelopment planning proposal of Anzio site not only involves building construction but also requires alteration of ground levels to accommodate use by the elderly and wheelchair users. This contributes to more tree loss than would otherwise normally be recommended. This would be the case with any development on this site allocated for extra care housing.

Under BS5837 5.3.4 (d) due consideration needs to be given to possible future pressure for removal of retained trees due to unreasonable obstruction of light or seasonal nuisance, e.g., fruit and leaf fall and debris causing slippery patches which may cause an ongoing hazard.

3. Arboricultural Impact Assessment (AIA)

This summary accompanies the attached **Cascade Chart for Tree Quality Assessment** and should be read in conjunction with the original Core Document.

4. Survey Limitations

All the trees and hedges that fall within the proposed area of site works have been included, however, those that are unaffected by the proposed development have been recorded with only brief detail on the topographical survey only. The advice given in this report is subject to the original constraints, outlines and relevant terms indicated in the core document. No trees have been climbed or inspected internally. All information in this report is based on information gathered from the ground.

For the purpose of this assessment, the Tree Removal Proposals drawing LS6155/P/L102B (supported by drwgs PL101-, 105-, 106- and 107B) have been used as basis for consideration. This takes account of anticipated tree removals, tree protection options and alterations to account for specific tree features. No account has been given to underground services, existing or proposed.

This survey and assessment is based on normal climatic condition in the UK and does not guarantee tree health in the event of abnormal weather conditions in storm occurrence.

The validity, accuracy and findings of this report will be directly relation to the accuracy of information made available during inspection of the site and the proposed planning drawings. The author of this report will not be responsible for the recommendations within this report where essential data is not made available or is inaccurate.

The report is valid for one year.

5. Tree Retention and Protection Proposals

Although tree retention is obviously important many of the trees on this site were planted for a specific purpose i.e., screening using fast growing species. This purpose has not only now ceased but through 20 years of neglect these screening trees are now in poor condition, mainly in groups. Removal of some of these trees to allow development of the remainder in this situation is problematic at best as the trees become co-dependent and are subject to snapping or root plate heave.

I recommend considered supplementary planting for the best long and short term solution. By the time the new trees develop the old trees could be removed. See **Addendum**.

6. Conclusions

This report concludes that of 680 trees and groups (over 750 individual trees) only 203 are being removed, 80% of which are of the poorest quality U and C categories.

At this time 195 further select standard and 508 juvenile trees will also be planted.

Future Management [see **Addendum**]:

This site is fairly unusual in that it has a very specific planted tree stock, which until the site was abandoned in 2007, was well managed. It consists of two main planting types from a similar period of development. Presumably, the individual and larger trees were planted to provide height and green infrastructure among the buildings. The lower scrub layer, tightly packed planting, for breaking up the views of the buildings into compartments whilst screening sensitive military areas.

Consolidated effort by the development team has been focused on retaining as many trees as possible with minimum loss of the quality trees. No category A trees are to be lost and Cat B retention is optimal. These are the trees that offer the best long term tree cover and heritage. The chart at the bottom of the page will provide detailed information for the management of retained poor quality trees. These trees have a short life expectancy but will have an important role in the future of the living cover.

The site has returned quickly to a wild habitat in which many of the trees have produced suckers from the roots which now are significant and in some places dominant (see photo 1). Some areas have been enhanced by areas of natural regeneration from seed (see photo 2).

Great effort has been made to retain much of the existing tree stock. Many are now in decline due to lack of management as individuals and groups. They could be revitalised and given a new lease of life through well-established techniques such as thinning, coppicing and pollarding.

This management will be enhanced with carefully considered planting. The aim is to not only manage and maintain the healthy long term tree cover, but supplement the stock of poorer quality trees with limited life spans. So, in 5 years+, the poorer quality trees can be removed as part of a sensitive management programme having initially provided shelter for their new neighbours. Their loss will provide room for the remainders' future and on-going development.



Photo 1 Example of Alder suckers T514 B





Photo 2 Natural Regeneration from seed in the area of T261 and T270



Appendix 1 Barriers and ground protection

6.2 Barriers and ground protection

6.2.1 General

6.2.1.1 All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed (see 6.2.3).

6.2.1.2 Areas of retained structural planting, or designated for new structural planting, should be similarly protected, based on the extent of the soft landscaping shown on the approved drawings.

6.2.1.3 The protected area 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 and, where necessary, approval from the local planning authority.

6.2.1.4 Where required, pre-development tree work may be undertaken before the installation of tree protection measures, with the agreement of the project arboriculturist or local planning authority if appropriate (see also 8.8.1).

6.2.1.5 It should be confirmed by the project arboriculturist that the barriers and ground protection have been correctly set out on site, prior to the commencement of any other operations.

6.2.2 Barriers

6.2.2.1 Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

6.2.2.2 The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

6.2.2.3 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority. For example, 2 m tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected

on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Figure 2 Default specification for protective barrier

