Nithen End Farm, Buxton

# Tree Survey Report

December 2011





Prepared for

**Mr V. Garlick.**

Table of Contents


1 Introduction ..... 1
2 Methodology ..... 2
3 Schedule of Existing Trees ..... 3
4 Key to Abbreviations Used in the Survey ..... 4
5 Arboricultural recommendations ..... 5
5.1 General Principles ..... 5
5.2 Site Observations ..... 6
5.3 Best Practice Guidance ..... 7
5.4 Conclusion ..... 7
6 References ..... 8
Appendix 1: Site Layout Plan ..... 9

# 1 Introduction

Jonathon V Davies has been commissioned by Mr V Garlick to undertake a survey of a tree on a parcel of land at Nithen End Farm, Buxton, Derbyshire. Appendix 1 illustrates the location of the site, which is centred on National Ordnance Survey Grid Reference SK 048 740.

It is understood that the findings of the tree survey will supplement a planning application for two new dwellings and associated garden space. A draft design layout is shown on Jonathon V Davies drawing 100 (October 2011).

This tree survey report has been written in accordance with '*Trees in Relation to Construction'* BS5837 (2005) and provides guidance as to the nature and quality of the existing tree stock.

# 2 Methodology

The tree survey was based upon existing topographical information relating to the site and conducted in accordance with the requirements of BS:5837(2005). Fieldwork was undertaken on the 13th December 2011 during which dimensional data and observational information were collected. A DBH tape measure and Bosch DLE50 Distometer were used in the collection of this, which now form the basis of this report.

It should be noted that the scope of this survey was deliberately restricted to the trees likely to be affected by draft housing design layout. The survey comprised a non-intrusive, visual survey undertaken from ground level. Where further inspection is deemed appropriate to gauge the condition of the tree (or trees), this has been identified as part of the Preliminary Management Recommendations made for each tree.

Average dimensions or dimensional ranges have occasionally been used where appropriate to best describe arboreal features. References to habitat value should be taken as comparative observations compared with a base-line situation with no tree present.

# 3 Schedule of Existing Trees

The findings of the tree survey are presented in Table 1 below, which should be read in conjunction with the tree survey plan (Appendix 1).

**Table 1:** Schedule of Existing Trees

| Ref. No | Species | Est. Height (m) | Stem Dia. (mm) | Canopy Spread (m) | | | | Crown Clear-ance (m) | Physio-logical Condition | Age | Structural Condition | Preliminary Management Recommendations | Est. Remaining Contribution (yrs) | Cat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | N | S | E | W | | | | | | | |
| T1 | Goat willow (*Salix caprea*) | 9 | 200 Average MS | 5 | 5 | 5 | 4 | 3 (MS) | Good | M | This mature shrub specimen is located along a stone wall, which is defunct along its entire length. The specimen occurs in isolation and has three main trunks that extend out in angles from the main base trunk. The bark is developing ridges and furrows to reflect its maturity and the canopy is well balanced and wide spreading. There are some small attached dead branches within the main canopy. | Of screening value to location. Due to the maturity of this specimen, it is recognised as having conservation value. Remove deadwood only where posing a hazard to known targets. | 20+ | B2/3 |

1) All trees and hedgerows subject to full arboricultural inspection for safety, with respect of both existing and proposed site uses/users (targets).
2) Any management recommendations in this report subject to protection status of trees (e.g. TPO or Conservation area etc.) and LPA approval.
3) Any management recommendations in this report subject to presence of nesting birds or protected species (e.g. Bats)

# 4 Key to Abbreviations Used in the Survey

| | |
|---|---|
| Ref No | Corresponding number on plan – T=Tree/H=Hedge/G=Group |
| Species | Common name followed by botanical name shown in *italics* |
| Stem Diameter | Diameter measured in centimetres at 1.5 m above ground level.<br>(ms = Multi-stem tree with diameter measured at base/above root flare) |
| Spread | Measured on the four compass points |
| Crown clearance | The height to the lowest branch attachments |
| Category | 1=Arboricultural value<br>2=Landscape value<br>3=Cultural value |
| | A=High quality/value 40yrs+<br>B=Moderate quality/value 20yrs+<br>C=Low quality/value min 10yrs/stem dia less than 150mm<br>R=Remove |
| Age | Young (Y)<br>Semi-Mature (SM)<br>Mature (M)<br>Over Mature (OM)<br>Veteran (V)<br>Classification is given in relation to the life expectancy of the specific species. |
| Physiological condition | Good<br>Fair<br>Poor<br>Dead |

# 5 Arboricultural recommendations

## 5.1 General Principles

The Root Protection Area (RPA) defines the approximate underground area occupied by the tree roots based on a calculation relating to the girth of the tree and point above ground at which the trunk begins to branch out. See BS:5837(2005), Table 2 below:

**Table 2 — Calculating the RPA**

| Number of stems | Calculation |
|---|---|
| Single stem tree | $\text{RPA}(m^2) = \left(\frac{\text{stem diameter (mm) @ 1.5 m} \times 12}{1\ 000}\right)^2 \times 3.142$ |
| Tree with more than one stem arising below 1.5 m above ground level | $\text{RPA}(m^2) = \left(\frac{\text{Basal diameter (measured immediately above root flare (mm)} \times 10}{1\ 000}\right)^2 \times 3.142$ |
| NOTE The 12× multiplier is based on NJUG 10 [9] and published work by Matheny and Clark [10]. | |

**5.2.3** The calculated RPA should be capped to 707 $m^2$, e.g. which is equivalent to a circle with a radius of 15 m or a square with approximately 26 m sides.

The RPA of existing tree stock is an important material consideration when considering site constraints and planning development activities.

Construction operations, materials storage or changes in level should generally be avoided within the RPA of a tree which is to be retained on a developed site. This is because these operations have the potential to damage or kill the tree, the safe retention of which may be a condition of Planning Approval. This is significant when considering construction in close proximity to off site/third party. Special construction techniques, i.e. no-dig construction/permeable surfacing may be considered for light loadings i.e. pedestrian footpaths etc. within the RPA.

It should be noted that the RPA often varies in size to the physical area occupied by the canopy spread, (due to particular tree species or management practices to artificially alter the canopy size). This is of particular importance when integrating new development in close proximity of existing trees. Similarly, the canopy heights (as identified in the Schedule of Existing Trees) should be considered as the usable space below a low branching tree will be severely restricted without specific arboricultural works to raise the canopy (which may not always be appropriate).

## 5.2 Site Observations

The survey area included the single mature shrub species goat willow (*Salix caprea*). This species is typically referred to a shrub as it will rarely attain the height of a standard tree. The only exception to this is where goat willow grows within a woodland environment and is in competition with adjacent trees, thus can grow more upright.

The goat willow at Nithen End Farm occurs on the southern boundary of the proposed development. It is located within a defunct stone wall, although is not considered detrimental to the overall condition of the wall. The specimen has three main trunks that grow out at an angle from the main base of the trunk. Due to this shrub occurring in isolation, the branches have developed into a wide spreading and well balanced crown.

## 5.3 Best Practice Guidance

This tree survey report provides details on the quality of the existing tree stock, which can be used to guide the development design. For the following reasons, it is recommended that the existing tree stock is considered for retention within the future development design:

- to preserve the continuity of the current screening function offered by the goat willow;
- to provide added value to the amenity landscape, providing a sense of well-being to the local community;
- to preserve wildlife habitats/wildlife corridors for animal species.

Where trees are not retained within the development, or are likely to have their RPA impacted, an Arboricultural Assessment (AA) will be required to help reduce impacts on trees during site clearance and construction. This would involve identifying the provision of protective fencing around the Root Protection Zone to ensure that no construction activities could take place in this area. Trees should be protected to the extent of the RPA or canopy spread, which ever is the greater (since mechanical damage to the canopy can occur).

Where trees can be retained within a development, progressive and sensitive management such as sympathetic pruning should be considered. This would offer the additional following benefits:

- further extension of the life expectancy of the existing trees/shrubs
- continued preservation and enhancement of habitats/wildlife corridors
- potential reduction of risk of damage to targets from failing trunks/limbs within mature tree specimens

Management recommendations would need to be subject to any protection status afforded to the existing tree stock (e.g. Tree Preservation Orders).

## 5.4 Conclusion

The tree survey has identified a single mature goat willow along the southern boundary of the proposed development area. The shrub is considered to have some screening value within the context of the landscape and due to its maturity is further recognised for its potential conservation value.

It is recommended that the proposed development seeks to minimise impacting on the goat willow. This could be achieved through adapting the development design and by adopting tree protection measures, as broadly outlined above.

Where trees can not be retained or where there is a risk of impacting on the RPA, it is recommended that a tree protection plan is prepared. The tree protection plan would be set out in accordance with best silvicultural working practice as detailed in BS5837(2005) and BS:3998 (2010).

# 6 References

BS5837 (2005). Trees in Relation to Construction – Recommendations. British Standards Institute

BS3998 (2010). Tree Work Recommendations. British Standards Institute

# Appendix 1: Site Layout and Tree Survey Plan

