HPK/2013/0603

Hallam Land Management

Foxlow Farm, Buxton

Arboricultural Assessment

May 2013

FPCR Environment and Design Ltd
Registered Office: Lockington Hall, Lockington, Derby DE74 2RH
Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

Rev	Issue Status	Prepared / Date	Approved/Date
-	Draft	HCK / 10.05.13	HCK / 02.08.13
	Final	HCK / 02.08.13	HCK / 02.08.13

CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Hallam Land Management to present the findings of an arboricultural assessment and survey of trees located on land surrounding Foxlow Farm, Buxton (hereafter referred to as the site), Grid Ref SK 066 715, as shown in Figure 1. The survey was carried out on 20th March 2013.

1.2 The tree survey and assessment of existing trees has been carried out in accordance with British Standard 5837:2012 *'Trees in Relation to Design, Demolition and Construction - Recommendations'* (hereafter referred to as BS5837). The guidelines give recommendations on the relationship between trees and design, demolition and construction processes to achieve a harmonious and sustainable relationship between trees and structures.

1.3 The purpose of the report is to present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality in accordance with the recommendations, to accompany a planning application. The tree survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development.

Site Description

1.4 The site covers approximately 22.3ha and is situated to the south side of Buxton. The A515 (Ashbourne Road) runs along the north-eastern boundary and existing residential properties of Harpur Hill surround its north-west, west and southern boundaries with the exception of a small portion of the southwest boundary where this adjoins with farmland.

1.5 Land use within the site is generally agricultural (arable and pasture) covering a number of field compartments. The field boundaries are predominantly demarked with traditional dry stone walls. There are occasional subdivisions of the field compartments by post and wire fencing. In the centre of the site, although outside of the application boundary there is a covered reservoir, parts of the boundary of which are landscaped with trees. In the western section of the site adjacent to the reservoir and to the south east of Foxlow Farm Buildings there is a hill, referred to as Fox Low atop which is a Bronze Age Barrow. The hill forms the highest part of the site from which point the land falls generally to the site boundaries.

1.6 The majority of tree cover across the site is contained within woodland type planted blocks or smaller tree groups. There are also approximately thirty mature individual trees concentrated in the western part of the site most of which as situated around and to the west side of Foxlow Farm House and other outbuildings. There are also a small number of individual trees on the residential boundaries within private ownership and along boundary with the A515.

1.7 The predominant species within the site are sycamore *Acer pseudoplatanus,* beech *Fagus sylvatica* and common ash *Fraxinus excelsior*. Tree cover within the site would be considered as extensive and due to the type, character and numbers being present forms important integral feature of the local landscape.

1.8 Following consultation with the relevant Local Planning Authority it has been confirmed that is a Tree Preservation Order, namely TPO no. 56 entitled "Trees and Woodlands in Buxton", confirmed 3rd November 1976, which applies to a number of trees present within the assessment site and therefore statutory constraints apply to the development in respect of trees. A plan detailing trees covered by the TPO has been included within the report as Appendix C and further details are given in paragraphs 4.15 to 4.17.

1.9 The Local Planning Authority for the site is High Peak Borough Council, although the Preservation Order is administered by Derbyshire County Council.

1.10 The report comprises the following:

- Chapter 1 provides an introduction to the assessment work, its purpose and background details.
- Chapter 2 briefly describes the methodology by which the tree survey and assessment has been undertaken.
- Chapter 3 presents a summary of the results of a tree survey.
- Chapter 4 evaluates the findings of the survey and assessment in respect of the development proposals in the form of an Arboricultural Impact Assessment and also provides principle recommendations for mitigation planting, specific tree protection measures including pruning.
- Chapter 5 presents an indication of the tree protection measures to be required from a general viewpoint such as typical fencing requirements.
- Chapter 6 provides a conclusion to the findings of the assessment.

1.11 It must be understood should any specific tree protection be required, this would need to be separately considered where needs arise prior to the commencement of construction activity following approval. This would be in the form of an arboricultural method statement produced in accordance with guidance in BS5837 and is beyond the scope of this arboricultural assessment.

2.0 METHODOLOGY

2.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturist and recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of proposed development in a transparent, understandable and systematic way.

2.2 Trees have been assessed as groups or woodlands where it has been determined appropriate. The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture. An assessment of individual trees within the groups or woodlands has been made where there has been a clear need to differentiate between them for example. in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.

2.3 Trees have been divided into one of four categories based on Table 1 of BS5837, *'Cascade chart for tree quality assessment'*. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds. Categories A, B & C are applied to trees that should be material considerations in the development process.

2.4 Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.

2.5 **Category (U) – (Dark Red):** Trees which are unsuitable for retention and are 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 within this category are:

- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
- Trees that are infected with pathogens of significance to the health and or/safety of other trees nearby trees or are very low quality trees suppressing adjacent trees of better quality.
- Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.

2.6 **Category (A) – (Light Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:

- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
- Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
- Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.

2.7 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:

- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
- Sub category (ii) trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
- Sub category (iii) trees with material conservation or other cultural value.

2.8 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

Tree Schedule

2.9 Appendix A presents details of the individual trees and groups including heights, diameters at breast height, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.

2.10 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

Conditions of Tree Survey

2.11 The survey was completed from ground level only and from within the boundary of the site. Aerial inspection of trees was not undertaken at this stage. Investigations as to the internal condition of a tree have also not been undertaken being beyond the scope of this assessment. Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

Site Plans

2.12 The individual positions of trees and groups have been shown on the Tree Survey Plan, Figure 2 (drawing no's 5394-A-02 and 03). The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. The crown spread, root protection area and shade pattern (where appropriate) are indicated on this plan.

2.13 As part of the Arboricultural Impact Assessment, a Tree Retention Plan, Figure 3 (drawing no's 5394-A-04 and 05 has been prepared to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies which trees that are to be removed or retained as part of the proposed development and also trees considered unsuitable for retention through the assessment process (Category U).

Tree Constraints and Indicative Root Protection Area (RPA)

2.14 Below ground constraints to future development are represented by the area surrounding the tree that contains sufficient rooting volume for the specimen to have the best chance of survival in the long term this is known as the root protection area (RPA). The RPA has been calculated in accordance with section 4.6 of BS5837 and requires suitable protection in order for the tree to be incorporated into any future scheme. Where applicable the shape of the RPA has been altered to take into account the presence of surrounding obstacles which may have restricted root growth.

2.15 Where groups of trees have been assessed, the RPA has been shown based on the maximum sized tree in any one group and so may exceed the RPA required for some of the individual specimens within the group.

3.0 RESULTS

3.1 A total of sixty five individual trees, twenty groups of trees and four woodlands were surveyed as part of the arboricultural assessment. Trees were surveyed as individual trees, groups / blocks of trees and woodlands where examples are clearly present. Refer to Figure 2 – Tree Survey Plan (drawing no. 5394-A-02; 03) and Appendix A – Tree Schedule for full details of the trees included in this assessment. The table below summarises the trees assessed. Some of the individual trees, tree groups and woodlands been discussed in more detail following the table, owing to their physical condition or arboricultural and aesthetic value.

Results Summary

3.2 The majority of the sixty five individual trees surveyed are located on the west of the site around Foxlow farm house and buildings. They are predominantly free standing mature sycamore and create a parkland character to this part of the site. The remainder of individual trees are generally distributed around the boundaries as either being within private gardens of residential properties adjoining the site or for a small number positioned on field compartment boundaries. These particular trees are also predominantly sycamore and common ash but also include beech, goat willow *Salix caprea*, hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, elder Sambucus nigra, black hybrid poplar *Populus x canadensis* and Leyland Cypress *Cupressocyparis leylandii.*

3.3 The twenty tree groups generally contain more than one species type but the predominant species being sycamore and common ash with occasional beech, English elm, common lime *Tilia x europaea*, goat willow, Leyland cypress, silver birch *Betula pendula*, holly, hornbeam *Carpinus betulus*, wild cherry *Prunus avium*, Leyland Cypress, Norway spruce *Picea abies*, Norway Maple *Acer platanoides*, English oak *Quercus robur*, Elder, Swamp Cypress *Taxodium distichum* and cedar of Lebanon *Cedrus libani.*

3.4 The majority of tree groupings / woodlands are located in the southern half of the site. They are mostly visible when approaching the site from the south east (A515) and are subsequently strong features and characteristic of the surrounding local landscape.

3.5 The four woodlands contain the highest concentrations of trees on site by virtue of their collective numbers and all are planted (man-made). Their character and species composition are considered much typical of the local landscape where farmland has utilized opportunities for timber growing to act as wood supply; shelter belts and landscape visual purposes. Woodlands W1, W2 and W4 are all located on the boundary with the A515 and Woodland W3 has prominent central location. Woodland W1 is of younger age and consists of a mixture of early mature hazel *Corylus avellana;* hawthorn, holly, English oak, common ash, and beech. Woodlands W2 and W3 consisted of well-established large mature beech, sycamore, common ash and English elm *Ulmus procera.* Woodland W4 also consists of similar well-established mature beech, sycamore and the occasional English elm.

Table 1: Summary of Trees by Category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable	T23, T44	2		0
Category A (High Quality / Value)	T3, T4, T5, T24	4	TG11, TG14, W1, W2, W3, W4	6
Category B (Moderate Quality / Value	T6, T7, T8, T9, T10, T11, T13, T14, T15, T17, T19, T20, T25, T26, T27, T28, T31, T32, T34, T35, T36, T37, T41, T42, T43, T47, T51, T52, T56, T63	30	TG1, TG2, TG3, TG6, TG7, TG8, TG9, TG10, TG12, TG17, TG19	11
Category C (Low Quality / Value)	T1, T2, T12, T16, T18, T21, T22, T29, T30, T33, T35a, T38, T39, T40, T45, T46, T48, T49, T50, T53, T54, T55, T57, T58, T59, T60, T61, T62, T64	29	TG4, TG5, TG13, TG15, TG16, TG18, TG20	7

Individual Trees

Trees around Foxlow farm

3.6 Thirty seven of the individual trees surrounding and to the west of Foxlow Farm house and its buildings consisted of twenty sycamore, three beech, a single ash, a single goat willow, two hawthorn, a single elder and a single silver birch. These trees were generally free standing mature examples and gave a parkland character to this part of the site.

- Four trees T3 (sycamore), T4 and T5 (beech with interlocking crowns) and T24 were particularly fine examples of the species with few physical defects and were therefore regarded as retention category "A".
- Twenty trees T6-11, T13-15, T17, T19, T20, T25-28, T31, T32, T34 and T37 were sycamore with the exception of T7 (common ash) and T9 (beech). These trees were also all mature and in good condition however each specimen possessed a small amount of minor defects as would typically be expected of trees growing in this type of environment such as deadwood, minor storm damage or suppressed form all of which slightly impaired their overall condition, hence being downgraded to retention category "B" accordingly.

- Thirteen trees T1, T2, T12, T16, T18, T21, T29, T30, T33, T38, T39, T54 and T61 consisted of seven sycamore, a single goat willow, a single wild cherry, two hawthorn and a single silver birch. All were considered to be retention category "C" due to either compromised form, smaller overall dimensions and / or impaired physical condition accordingly.

Other trees within the site excluding trees on the site boundary

3.7 In addition to the trees around Foxlow farm and its buildings there were six further trees within the body of the site namely T41, T49, T51-T53 and T55.

3.8 Tree T41, a mature sycamore had a well-balanced crown although it was immediately adjacent to tree group TG 7. For its good condition it was considered to be retention category "B" as an individual tree.

3.9 Trees T51 and T52 were a pair of large mature beech positioned on a field compartment boundary in the central eastern part of the site. Due to close proximity to each other they had crown suppression and for this reason would be downgraded to retention category "B".

3.10 Trees T49 (hawthorn), T53 (holly) and T55 (hawthorn) were all considered to be retention category "C" for their generally low arboricultural quality and value. They were all located on field compartment boundaries with T49 being on the eastern part of the site just south of woodland W1. T53 is adjacent to T51 and T52. T55 is located centrally just south of trees group TG15.

Trees on the boundary with the A515

3.11 There were seven trees on this particular boundary namely T48, T50, T57 and T60 (common ash) and T56, T58 and T59 (sycamore). These trees were all retention category "C" with the exception of T56 which was a mature sycamore with good crown formation situated close to woodland W2 and subsequently elevated to be considered as retention category "B"

Trees on the residential boundary

3.12 There were thirteen trees on the residential boundary which consisted of five retention of category "B" (T35, T36, T42, T43 and T63), six retention category "C" (T22, T35a, T40, T45, T62 and T64) and two retention category "U" (T23 and T44). In their species mix, they consisted of four common ash, two sycamore, two goat willow, two Leyland cypress, a single beech, a single hybrid black poplar and a single hawthorn.

Trees on the south western boundary

3.13 There were two trees on this particular boundary namely T46 and T47 both of which were common ash. T46 was a small self-seeded specimen considered as being retention category "C". T47 was a large mature specimen but its positioned is slightly outside of the site boundary. The specimen had a 7m crown spread which extends into the site by approximately 3m and was regarded as retention category "B".

Groups of Trees

3.14 Of the twenty tree groups sixteen were positioned on the site boundaries and four within the site.

Tree groups on the residential boundary

3.15 There were twelve groups positioned on or very close to the existing residential boundaries. Eight of the groups were regarded as retention category "B" (TG1-3, TG6, TG8-10 and TG 19) and four as retention category "C" (TG4, TG5, TG18 and TG20). These groups consisted generally of a variety of species and included all the species listed in paragraph 3.3.

Tree groups on the north east boundary (A515)

3.16 There were three small tree groupings on the boundary with the A515 namely TG13 (ash), TG16 (Rowan *Sorbus aucuparia*) both regarded as retention category "C" and TG17 a group of three mature sycamore in good condition considered to be retention category "B".

Tree groups on the south eastern boundary

3.17 There was only a single tree group on this boundary, namely TG12 which consisted of two early mature ash trees in good condition which were regarded as retention category "B"

Tree groups within the site

3.18 There were four groups within the site boundary itself namely TG7, TG11, TG14 and TG15. These groups contained the highest tree numbers of the twenty tree groups assessed and were all positioned in the southern half of the site.

3.19 TG11 and TG14 were particularly strong features in the local landscape by virtue of their elevated position on higher parts of the site and for containing trees of good quality. TG11 was contained within a dry stone wall and TG14 situated in the corner of the dry stone wall boundary surrounding the covered reservoir. Both groups consisted primarily of mature common ash and sycamore and were considered to be retention category "A" for their contribution to visual amenity.

3.20 TG7 consisted of eight common ash, a single sycamore and a single English elm and was equally considered as being a strong feature within the local landscape and again contained within a dry stone wall boundary. It was not, however, considered to be as significant as TG11 and TG14 primarily for the lower quality of the individual trees within it and as such had been downgraded to a retention category "B".

3.21 TG15 is situated centrally in the site and is comprised of several over mature ash, sycamore, beech and lime trees many of which had suffered both storm damage to the branches and lower stem impact damage. A number of the individual trees were regarded as category "U" (unsuitable for retention) due to their physical condition and limited safe future life expectancy and as such collectively TG15 was considered to be retention category "C".

3.22 Any retained tree groups where it is being proposed to increase the level of public access allowed should be subjected to a more detailed survey of the individual trees within them as to identify remedial work on safety grounds.

Woodlands

3.23 All four of the woodlands W1-4 were typical features of the local landscape and considered to be retention category "A" for their arboricultural value and contribution. Woodland W3 positioned centrally on the site was regarded as being a particularly strong feature of the local landscape having an elevated position and clearly visible from views outside of the site.

3.24 Woodlands W2 and W3 consisted of large mature beech, sycamore, common ash and English elm and Woodland W4 supported mature beech, sycamore and the occasional English elm.

3.25 Both Woodlands showed little evidence of having received specific past management and thus had individual trees which housed crown deadwood and other defects present typical of such woodlands. As previously if it is intended to increase the level of public access to the woodland parcels, it would be strongly recommended that a detailed inspection of the individual trees be undertaken to identify any remedial works that may be necessary to address defective material / trees in the interests of safety.

3.26 Woodland W1 was a younger area of planting in comparison to Woodlands W2 – 4 and consisted of a mixture of early mature English oak, common ash, beech, holly, hawthorn and hazel. It would be recommended that decisions as to appropriate types and level of work be made depending, on the desired future for the area, to enable the woodland to develop in the future. Such considerations would be best set out in the form of a small specifically written management plan.

4.0 ARBORICULTURAL IMPACT ASSESSMENT

4.1 The following paragraphs presents a summary of the tree survey and offers discussion of particular trees, groups and woodlands recorded in the context of the proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.

4.2 The AIA has been based upon the Illustrative Master Plan (drawing no. 5394-L-03 Rev B July 2013 FPCR Environment and Design Limited) and seeks to outline the potential impact that the proposals would have on existing trees. The above drawing shows proposals for 375 new homes within the northern part of the site along with associated infrastructure to include a local centre for mixed use (retail units, leisure use, doctors surgery and café). The residential element will also support a bowls green set within structured open space. Parts of the northern half of the site will be open space and include areas of managed formal and informal sports; equipped play areas and new landscaping. The southern portion of the site will also be retained as agricultural land.

4.3 Access to the new development will be a single point leading onto Ashbourne Road, and at a further point via the existing public footpath.

4.4 Foxlow Farm house and cottage will be retained as private dwellings but outbuildings to be removed. In addition, the covered reservoir is to be retained.

4.5 The development will be supported by Green Infrastructure including buffer planting and landscape edge planting especially along the Ashbourne Road frontage to create a soft appearance linking the existing woodland parcels.

4.6 Planting within the development itself will provide greenery including tree planting in the built element along new streets and incidental areas of open space.

4.7 An overlay of the above layout has been incorporated in the Tree Retention Plan (Figure 3) to assist in identifying potential conflicts with the existing trees.

4.8 The considerations by way of arboricultural implications that would arise should development occur on the site as per the above plan are set out below.

4.9 The proposed development has in principle, by following guidance within *British Standard 5837 (2012) – Trees in Relation to Design, Demolition and Construction - Recommendations*, and where practicable attempted to retain as many category A and B specimens and groups of trees as possible thereby securing the main concentrations of higher quality trees. The vast majority of trees within the site, including the larger groups of trees and woodland parcels are retained.

4.10 The proposed development as per the Illustrative Master Plan has illustrated all the surveyed tree cover pertaining to the four retention categories including the two specimens regarded as category U (red), unsuitable for retention. However at this stage it would be the intension to retain these two trees (one being within private ownership) for any ecological and landscape value these trees hold. Final decisions as to the most appropriate course of action / treatment for the future of such trees will be made at the Reserved Matters stage.

4.11 Overall the proposed development will be retaining the large majority of tree cover across the site as part of the wider green infrastructure strategy incorporating it into the new landscape which will continue to provide green links with the surrounding countryside and retain the characteristic treed landscape. All of the tree cover within the southern portion of the site is to be retained.

4.12 Many of the trees within the assessment are the subjects of a Tree Preservation Order. The proposed development will retain a vast majority of the collection of TPO trees that are still present since the time the Order was made. The exception would be two sycamore part of 56-G5. It is considered however that these particular losses should not raise objection considering the scheme is to retain all the other TPO specimens in the area west of Foxlow Farm and replacement trees will be planted in close proximity to mitigate for their loss.

4.13 See further paragraphs for details of which trees are covered within the Order.

4.14 In order to facilitate the proposed development as per the Illustrative Master Plan only a small number of trees losses would need to occur for the residential component the layout, all of which is in the northern portion of the site. Those trees to be removed are listed below and in each case a brief explanation as to the reason for removal is given. The grouping of free standing sycamore to the west side of the Foxlow Farm complex would largely be retained requiring only a few to be removed and the design of the layout has especially considered their existence and contribution visually to the local area. Of those to be removed, most are category C and arboriculturally of lower grade.

4.15 Clearly any final tree losses would need to await a more detailed design of the built element, however any losses that need to occur will be kept to an absolute minimum as to only those required thereby avoiding excessive tree losses. Further assessment can be made at a future stage and in conjunction with the highway engineers in each case where roads are proposed.

Main Arboricultural Impacts

- T1 and T2 – these two category C trees, a goat willow and sycamore respectively would need to be removed for an internal link road. Being of low arboricultrual quality and value their loss from the site would not be considered as significant from an arboricultural perspective and mitigation for their loss will be provided as part of the supporting landscaping scheme to the residential area of higher quality, and suited to the new site use.
- T16 – this category C cherry would need to be removed as its position would be within the car parking provision for the bowls green. As above, being of low arboricultural quality its removal from the site should not give rise to any major objection and the loss will be mitigated for through new tree planting.
- T19 and T21 – two sycamore of category B and C respectively will need to be removed to facilitate the road loop in the residential area. The open space provision surrounding and supporting the bowls green would offer ideal space for new tree planting which would more than sufficiently mitigate for the loss of these two particular trees.
- T29 and T30 – a small hawthorn and sycamore respectively of category C grade will also need to be removed to facilitate the internal road loop within the residential area. As for the other category C specimens, being of low arboricultrual quality and value their removal from the site would not be considered significant from an arboricultural perspective and mitigation for their loss will be provided as part of the supporting landscaping scheme to the residential area of higher quality, and suited to the new site use.
- TG15 – This group contains several over mature ash, sycamore, beech and lime trees many of which had suffered the effects over time of damage from adverse weather conditions and the onset of maturity such that number of the individual examples were regarded as category "U" (unsuitable for retention). On the Illustrative Master plan the group of trees are to be retained due to the presence of the badger sett in their vicinity however decisions as to the long term management / treatment of those trees within the group that have severely compromised structural conditions for any potential risk of failure in the interests of public safety will need to be taken at the appropriate stage in the future. Due to the close proximity of trees to the proposed development measures to apply suitable remedial tree surgery, which may include tree removal will be necessary.

STATUTORY CONSTRAINTS

4.16 The following table details which trees are covered by the Tree Preservation Order entitled TPO 56 "Trees and Woodlands in Buxton", confirmed 3rd November 1976 – High Peak Borough Council, although the Preservation Order is administered by Derbyshire County Council. The trees covered within the TPO are protected by law from felling or uprooting, pruning including 'topping/lopping' and willful damage or destruction. Were planning permission to be granted for development this would override the protection afforded by the tree preservation order to those trees required for removal to facilitate the proposals.

Table 2: Tree Preservation Order details

Tree No, taken from FPCR Tree Survey	TPO reference no. given in the First Schedule
W4 containing mixed deciduous species	56-W2 described as mixed deciduous woodland – OSSK 0671 being parcel 7087 adjacent to the west side of A515 Ashbourne Road
W2 containing mixed deciduous species	56-W3 described as mixed deciduous woodland - OSSK 0671, 0771 being parcel 9955 adjacent to the west side of A515 Ashbourne Road
Now present in this part of the site 20 sycamore (T3, T6, T8, T10-T15, T17-T21, T24-T28); 1 ash (T7); no elm; three beech (T4, T5 and T9 – young 7m high specimen not included with the Order of 1976)	56-G5 described as containing 28 sycamore, 2 ash, 12 elm and 2 beech - OSSK 0671, being parcel 4843 to the west of Foxlow Farm
G15 containing several ash, sycamore, beech and lime	56-G6 described as containing 3 ash, 1 lime, 4 sycamore, 4 beech and 1 elm
W3 containing sycamore, ash, beech and elm	56-W4 described as mixed deciduous woodland - OSSK 0671, being parcel 6934, south east of Foxlow Farm and north of Nettleton Lane and Trenchard Drive
TG14 containing ash and sycamore	56-G7 described as containing 3 sycamore and 8 ash - OSSK 0671, being part of parcel 8228 north of Trenchard Drive and North East of Fox Low
TG7 containing 8 ash, 1 sycamore and 1 elm; T41 a sycamore	56-G8 described as containing 2 sycamore, 10 ash and 1 elm - OSSK 0671, being part of parcel 8228 north of Trenchard Drive and East of Fox Low
TG8 containing many ash alongside elm and sycamore; T42 – T45 all of which were ash	56-G9 described as containing 3 elm, 8 sycamore and 31 ash - OSSK 0671, being part of parcel 9014 north of Trenchard Drive and East of Fox Low
TG11 containing many ash alongside sycamore and occasional elm	56-A2 described as the several trees of whatever species standing in the area numbered A.2 on the map - OSSK 0671, parcel 0621 and part parcels 1717, and 1900 to west of Trenchard Drive

4.17 Following consultation with the local planning authority it has been confirmed that the site does not falls within a Conservation Area.

4.18 Prior to any tree surgery and / or felling being carried out it will be necessary to apply to the relevant local planning authority to gain consent for the works. For more information regarding conservation areas and tree preservation orders it is advised that contact is made with the local planning authority's arboricultural officer, or other such relevant person.

General Design Principles in Relation to Retained Trees

4.19 The master planning approach has taken into account the natural features of the site and has been developed through a well-considered design process to see the retention of the key landscape features such as landform and tree cover. It will therefore be possible to retain almost all the existing trees on site as part of the overall Landscape Strategy and wider green infrastructure.

4.20 For those specimens whose positions would be within or close to the residential areas it will be necessary to pay close attention to layouts at the appropriate stages in the detailed design process so that root protection areas of those trees can be fully accommodated. This will enable successful integration of any retained specimens into the scheme to ensure their survival in the future. The retention of large trees within the built environment will enhance the new development by softening the built infrastructure.

4.21 From an arboricultural perspective, it is recommended that at the detailed design stages the principal built infrastructure components and link roads attempt to be respectful of the higher quality specimens thus avoiding loss of further key specimens and be sympathetically designed to avoid conflicting with too many of those specimens as possible.

4.22 Despite the abovementioned tree losses to facilitate the layout the proposed built development scheme has shown potential to be capable of retaining the higher quality existing trees and on balance, considering the high proportion of trees potentially retained across the site and the likely successful incorporation of those retained specimens into the supporting green infrastructure, there should be no major objections raised to the loss of the few specimens identified.

4.23 The development will be providing several large areas of greenspace as well as a number of other incidental areas of public open space within the residential area, structured street tree planting, other 'Greenways', sections of structural buffer planting and flood attenuation i.e. balancing ponds / SUDs features, incorporated within the scheme which would seek to house the main tree retentions and offer suitable opportunities for new tree planting.

4.24 The detailed residential layout should take into account the presence of mature trees when considering the juxtaposition of new housing close to trees at the detailed design stages especially in terms of shade. Ideally retained trees should be retained within areas of greenspace, over private gardens which would automatically reduce the pressure to prune trees from the new occupants for reasons commonly experienced in situation such as this i.e. tree crowns overhanging property boundaries.

4.25 From an arboricultural perspective it is always important to carefully consider the impact of the mature trees on the new dwellings for their juxtaposition in terms of overhanging crowns and any defective crowns i.e. amounts of dead wood. It would be recommended that decisions are taken at the appropriate stages and where necessary as to undertaking a sensitive amount of tree surgery to address the low hanging crowns and the presence of any dead wood prior to occupation thereby reducing the pressure to prune the trees upon occupancy of the new dwellings. Particularly where large trees are to be retained their presence would be possibly considered as overbearing by the new occupants in close proximity. Therefore tree surgery would be beneficial to assist with integrating the mature tree cover with the new development.

4.26 Attention should also be paid at the detailed design stages for the housing types / styles of those properties to the south side of new housing from the effects of shade cast. Additional pressure to prune trees to obtain higher light levels by new occupants is a common occurrence in situations where mature tree cover lies to the south of houses / gardens.

4.27 Careful consideration should also be given to the appropriateness/specification provided for new tree planting in order to maximise the benefit of future tree planting and in order to provide a long-term treescape to help integrate the proposed residential development into the wider landscape with as little as possible conflict for the residential dwellings.

4.28 At the detailed design stages closer assessment of the distance of proposed development in relation to the calculated root protection area of retained trees should be made and modifications to the detailed layout made where necessary. Should there be areas where it is not possible to modify the layout the use of no-dig construction methods will need to be considered prior to decisions being made as to the removal of each tree concerned. Such construction methods can be used particularly in the case of footways, driveways and other light use access roads.

4.29 When considering layouts an important element of detailed design is the consideration of the eventual positioning of any utility services. As recommended by the guidance given in section 7.7 of BS5837 services, where possible, should not encroach within the root protection areas of retained trees.

If below-ground services are proposed within a root protection area modifications to the alignment of the service route may need to be made in order to minimise adverse effects on root stability and overall tree-health.

4.30 Consideration may also need to be given to the potential for tree roots of newly planted trees and hedgerows to affect or compromise the future services. As far as feasible, it would be preferable that proposed services near both the existing and any new planting should be ducted for ease of access and maintenance and grouped together to minimise any future disturbance.

Mitigation for Tree Losses

4.31 New tree planting should form an integral part of any new development and be considered at the design stages of emerging layouts. Proposals for new tree planting should be appropriate for the future use of the site and not only improve and enhance the existing tree population, but to be complementary to the local landscape character and being suited to the sites contextual surroundings. The purpose and function of any new tree planting should be understood from the start of any design stages so that key objectives from a landscape perspective can also be achieved. Therefore it may be necessary to seek advice from a landscape architect where required to assist with integrating structural landscaping with the built elements of the development.

4.32 As part of the development proposals it is recommended that any supporting landscaping scheme should seek to provide an adequate quantity of tree planting to suitably mitigate for the loss of trees required to facilitate the development. The landscaping scheme should consider providing tree planting in the following situations; new amenity planting as part of any proposed road infrastructure; private gardens; areas of incidental open space; new public parks and larger areas of open space; and structural buffer planting where appropriate.

4.33 Future landscaping schemes should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use. Careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour and maintenance requirements in relation to both the built form of the new development and the retained landscape features.

4.34 Species choices should therefore carefully be selected to be suitable to the new environment for example using small to medium sized species in restricted spaces and larger trees where space permits i.e. in areas of open space and areas of structural landscape buffer planting.

4.35 Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

4.36 Wherever possible, following discussions with the developer and utility company concerned, particularly on new development sites, common service trenches should be specified to minimise land take associated with underground service provision and to facilitate access for future maintenance.

Tree Management

4.37 Once a layout for the development has been finalised and a review of the relationship between the layout with the retained trees has been undertaken, a qualified arboriculturalist should prepare a schedule of tree works listing all the trees requiring work (making use of reference numbers), accompanied by a plan showing the location of each tree.

4.38 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees,* where there is a potential for increased or new public access i.e. open space and community park, in order to satisfy the landowners duty of care. Additionally inspections annually and following major storms should be carried out by an experienced arboriculturist or arborist to identify any potential public health and safety risks and to agree remedial works as required.

4.39 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.

4.40 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

General Design Principles in Relation to Retained Trees

4.41 At the detailed design stages closer assessment of the distance of proposed development in relation to the calculated root protection area of retained trees should be made and modifications to the layout made where necessary. Should there be areas where it is not possible to modify the layout the use of no-dig construction methods will need to be considered prior to decisions being made as to the removal of each tree concerned. Such construction methods can be used particularly in the case of footways, driveways and other light use access roads.

4.42 When considering layouts an important element of detailed design is the consideration of the eventual positioning of any utility services. As recommended by the guidance given in section 7.7 of BS5837 services, where possible, should not encroach within the root protection areas of retained trees. If below-ground services are proposed within a root protection area modifications to the alignment of the service route may need to be made in order to minimise adverse effects on root stability and overall tree-health.

4.43 Consideration may also need to be given to the potential for tree roots of newly planted trees and hedgerows to affect or compromise the future services. As far as feasible, it would be preferable that proposed services near both the existing and any new planting should be ducted for ease of access and maintenance and grouped together to minimise any future disturbance.

5.0 TREE PROTECTION MEASURES

5.1 Retained trees will be adequately protected during works ensuring that the calculated RPA for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and should be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

5.2 All trees retained on site will be protected by barriers or ground protection around the calculated RPA or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.

5.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers should be regarded as a construction exclusion zone. Fencing and barriers should not be removed or altered without prior consultation with the project arboriculturalist.

5.4 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.

5.5 Where it has been agreed, construction access may take place within the RPA if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto geo-textile materials for pedestrian movements. Vehicular movements over the RPA will require the calculation of expected loading and the use of proprietary protection systems.

5.6 Confirmation that tree protective fencing or other barriers have been set out correctly should be gained prior to the commencement of site activity.

Tree Protection Barriers

5.7 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.

5.8 In most situations fencing should comprise a scaffold framework comprising a vertical and horizontal framework, well braced to resist impacts. For particular areas where construction activity is anticipated to be of a more intense nature higher fencing may be necessary. Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified. The standard fencing specification as recommended in BS5837 has been illustrated in Appendix B.

5.9 It may be appropriate on some sites to use temporary site offices as components of the protection barriers.

Ground Protection

5.10 Where it has been agreed, construction access may take place within the RPA if suitable ground protection measures are in place. Guidance on examples of appropriate ground protection for several different scenarios is provided in section 6.2.3 of BS5837. The location of and design for temporary ground protection should be detailed as part of an Arboricultural Method Statement once planning condition is given. In all cases, the objective is to avoid compaction of the soil which can arise from a single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

Protection outside the exclusion zone

5.11 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.

5.12 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area the area within to be a construction exclusion zone.

5.13 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.

5.14 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree bole. No concrete mixing should be done within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.

5.15 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.

5.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.

5.17 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees must be removed with due care (it may be necessary to remove such trees in sections).

Protection of Trees Close to the Site

5.18 There were a number of trees located on the boundaries of the site. The root protection area of these trees will need to be protected in the same way as all the retained trees within the site.

5.19 All trees located outside the boundaries of the assessment site yet within close proximity to works should be adequately protected during the course of the development by barriers or ground protection around the calculated RPA.

5.20 Any trees which are to be retained and whose RPAs may be affected by the development should be monitored to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

Protection for Aerial Parts of Retained Trees

5.21 Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment as part of the construction works it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obvious problem branches. Any such equipment would have potential to cause damage to parts of the crown material, i.e. low branches and limbs, of retained trees within the protective barriers. This is termed as 'access facilitation pruning' within BS5837. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist.

5.22 It is strongly advised that a pre-commencement site meeting is held with contractors who are responsible for operating machinery, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.

5.23 In the event of having caused any such branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with British Standard 3998:2010 to correct the damage, upon completion of development.

6.0 CONCLUSION

6.1 The surveyed tree cover associated with the Foxlow Farm application site was very typical of that found in the wider primarily agricultural landscape and was largely of native species. The principal arboricultural features are the mature trees and larger tree groups both of which have a collective intrinsic value locally as opposed to any individual component trees within them. Several blocks of woodland are also present within the site.

6.2 The majority of tree cover across the site is contained within woodland type planted blocks or smaller tree groups and is positioned in the southern half of the site area. There are also a goodly number of free standing mature individual trees, almost all being sycamore concentrated in the north western part of the site around and to the west side of Foxlow Farm itself. Other tree cover includes a small number of individual trees on the residential boundaries within private ownership and along boundary with the A515.

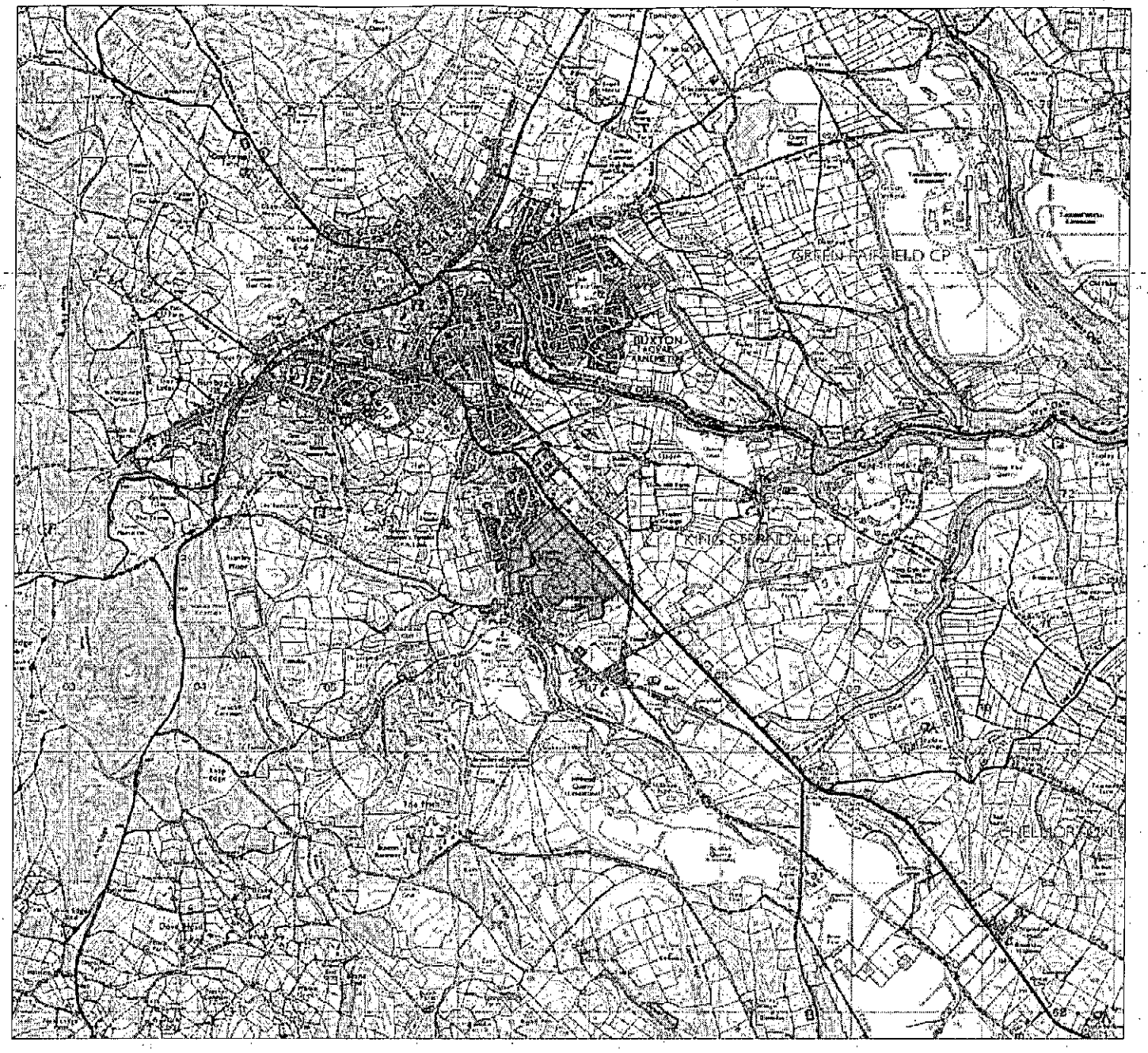
6.3 The predominant species are sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica* and common ash *Fraxinus excelsior* and these are especially the principle species of the groupings / woodland blocks. The remainder of the tree cover is comprised a greater range albeit fairly limited, including both broadleaved and deciduous types. Tree cover within the site would be considered as extensive and due to the type, character and numbers being present forms important integral feature of the local landscape.

6.4 Many of the trees within the assessment are the subjects of a Tree Preservation Order and details have been provided in the report as to which trees this applies. The Order is administered by Derbyshire County Council. The proposed development will retain a vast majority of the collection of TPO trees that are still present since the time the Order was made. The exception would be two sycamore part of 56-G5. It is considered however that these particular losses should not raise objection considering the scheme is to retain all the other TPO specimens in the area west of Foxlow Farm and replacement trees will be planted in close proximity to mitigate for their loss.

6.5 The proposals retain the large majority of the tree cover within the site as part of the wider green infrastructure strategy and the layout for the residential area requires only the loss of lower grade specimens.

6.6 Where trees are being retained within the proposed residential area and in close proximity to any built elements it will be necessary at the detailed design stage to consider providing sufficient space to accommodate for their continued growth thereby providing amenity value to the proposed development.

6.7 In summary, the proposed development should not result in an adverse impact to the local tree cover of the site from an arboricultural perspective. Through an iterative process, evolution of the design and its layout has been sympathetic to the natural features and thereby retained a high proportion of the trees present avoiding excessive tree removals and safeguarding the medium to long term successful incorporation of those existing trees. Any landscaping scheme to support the proposed development will only serve to further enhance and strengthen the existing tree cover thus securing a new generation of trees to continue into future years.



Assessment Boundary

Hallam Land Management

Foxlow Farm
Buxton

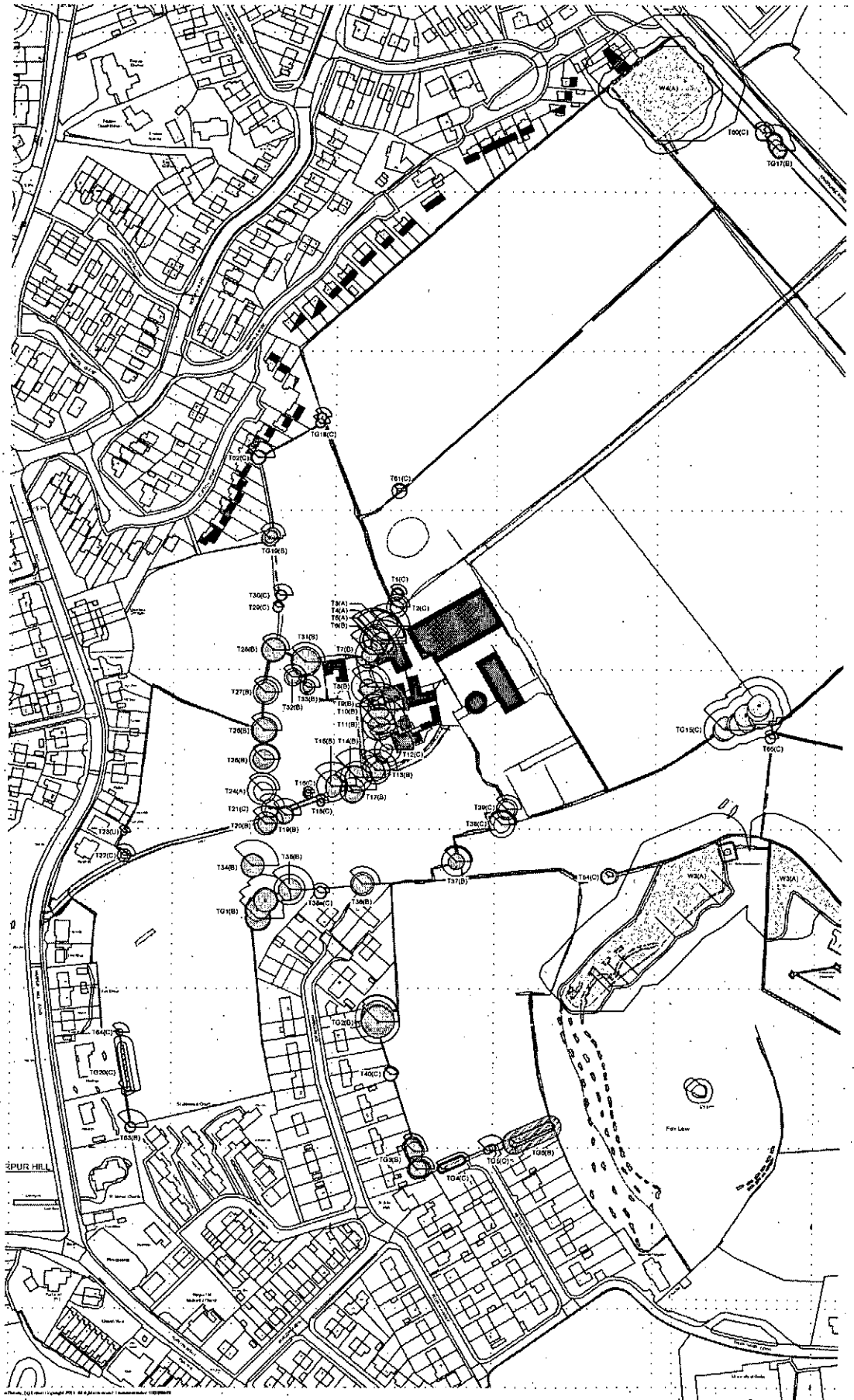
SITE LOCATION PLAN

Not To Scale HR 25.03.2013

Figure 1 **5394-A-01**

J:\5300\5394\Arboriculture\Site Location Plan-Figure 1.cdr

FPCR Environment and Design Ltd, Lockington Hall, Lockington, Derby, DE74 2RH • t: 01509 672772 • f: 01509 674565 • e: mail@fpcr.co.uk • w: www.fpcr.co.uk •
masterplanning • environmental assessment • landscape design • urban design • ecology • architecture • arboriculture •



(BS 5837:2012)

Category A - Trees of High Quality (BS 5837:2012)

Category B - Trees of Moderate Quality (BS 5837:2012)

Category C - Trees of Low Quality (BS 5837:2012)

Group hatching (Colour indicates BS Category)

Woodland

Root Protection Area (the RPA circle has been altered where appropriate to reflect underground constraints)

Individual / Group Number and BS Category

Scale 1:500 @ A3

0 10 20 30m

N

NOTES

All dimensions to be verified on site. Do not scale this drawing. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing produced in colour, a monochrome copy should not be relied upon, and is based on digital information supplied by the client in dwg format. The exact position of trees are to be checked and verified on site prior to construction.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by a qualified arboriculturalist or tree surgeon should works commence 12 months after the time of this survey. Please note that no works should be undertaken to any trees illustrated herein without first obtaining the proper authorisation to do so.

rev	date	description	by
-	27.03.2013	First issue	HR
-	08.07.2013	2nd issue	NJ

masterplanning
environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

FPCR Environment and Design Ltd
Lockington Hall
Lockington
Derby DE74 2RH

t: 01509 672772
f: 01509 674565
e: mail@fpcr.co.uk
w: www.fpcr.co.uk

client
Hallam Land Management

project
Foxlow Farm
Buxton

drawing title
TREE SURVEY PLAN
FIGURE 2.1

scale	drawn	date
1:500 @ A3	HR	March 2013

drawing number
5394-A-02

rev
-

CAD file: J:\5300\5394\ARB\Plans\Fig 2 Tree Survey Plan.dwg