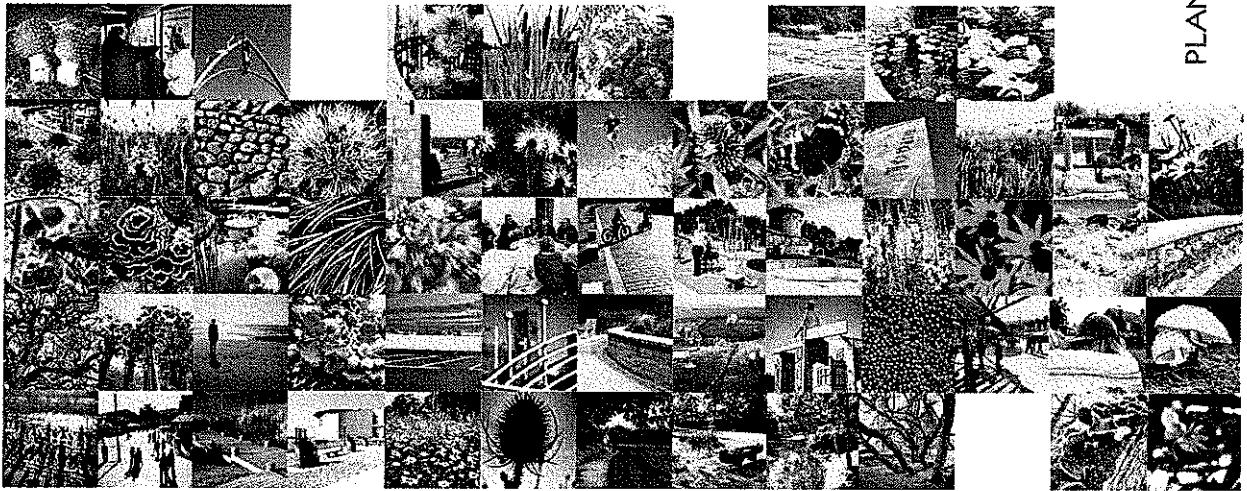


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PLANNING DESIGN ENVIRONMENT



**MEARLEY CROFT AND PRIMROSE LODGE
ARBORICULTURAL IMPLICATIONS ASSESSMENT**

(Report Ref: TEP.3116.001)

October 2011

Version 2

for

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ARBORICULTURAL IMPLICATIONS ASSESSMENT

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1.0 INTRODUCTION

- 1.1 TEP has been commissioned by Beck Developments to conduct an arboricultural survey of land around Mearley Brook, Clitheroe. This report details the arboricultural implications of developing the site, subsequent mitigation recommendations and protective measures.
- 1.2 The original survey was carried out in March 2011 by means of inspection from ground level by a qualified arboriculturist. Weather conditions during the survey were overcast. Following drafting of the development proposals, a subsequent site survey was undertaken to record additional detail about individual trees within a woodland compartment to the north of the site. This survey was undertaken in October 2011. Weather conditions during the survey were fine.
- 1.3 The survey area reflects the application site (hereafter 'Mearley Croft') and also a larger area of adjoining land (hereafter 'Primrose Lodge') that have no physical or legal distinction other than the boundary as defined for the purposes of this application. It is proposed that the larger Primrose Lodge area, which would benefit from better management, would be the recipient of improvement works by way of mitigation for the proposed development. This report provides detail on the application site *and* the wider site in the interests of a comprehensive and contextual analysis of the application.
- 1.4 The survey was carried out according to *British Standard 5837:2005 Trees in Relation to Construction – Recommendations*. Under the Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.
- 1.5 A topographical survey drawing detailing tree stem/canopy locations (Ref: CTESurveys BH[Primrose lodge]) was used to record the position of existing trees and vegetation. Where the age distribution and species mix of tree cover was relatively uniform, trees were plotted as groups. For the purposes of this report we have assumed that detail on the drawing is accurate.
- 1.6 A total of 45 individual trees (T1-T45) and 44 groups of trees (G1 – G44) were surveyed and mapped (refer to Drawing 1). All arboricultural information recorded during the survey is presented at Appendix 1.
- 1.7 The nature of the soils on site was not assessed during the survey. The possibility of minor soil movement due to tree root activity cannot be discounted. The advice of a structural engineer should be sought in regard to appropriate foundation depths, with reference made to *NHBC Guidelines Chapter 4.2* where appropriate.

- 1.8 This report provides the results of the survey and includes the following:
- A schedule of all trees located within, or in close proximity to the proposed development site (Appendix 1);
 - An assessment based on *BS 5837:2005*, of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: A, B, C or R (Appendices 1 & 2);
 - An assessment, based on *BS 5837:2005*, of the requirement for protection of trees during the construction phase (Section 5);
 - Advice on removal, retention and management of trees (Sections 4 and 6);
 - A Tree Constraints Plan detailing tree quality categories, canopy spreads and Root Protection Areas (**RPA**) for all trees surveyed (Drawing 1);
 - A Tree Implications and Protection Plan detailing the development proposals and trees to be retained and removed (Drawing 2);
 - Recommended Tree Protection Fencing (Drawing 3).

2.0 THE SITE AND SURROUNDINGS

- 2.1 The site is located in Clitheroe, Lancashire. The surrounding landscape comprises areas of residential housing, light industry and St James' C of E Primary School.
- 2.2 The boundaries of the survey area are defined by a wall along Woone Lane and houses along Woone Lane to the north-west, the grounds of St James' C of E Primary School to the north-east, housing, allotments and a recreational playing field to the south-east and Mearley Lodge and Primrose Road to the south and south-west.
- 2.3 The topography of the site is generally sloping down from the north-east to the south-west. The site is a valley around a watercourse (Mearley Brook) and is steep along much of the north-western slopes. The south-eastern slopes are less steep and the central areas of the site are occasionally inaccessible mudflats. Disused channels, sluice gates and other structures associated with the site's industrial past are located throughout the survey area.

Development Proposals

- 2.4 The proposed development includes a new road from Woone Lane to access new housing in the north east of the site between existing houses and the brook. The proposed dwellings will be associated with gardens, parking and other infrastructure.
- 2.5 The proposed residential development is within an existing woodland belt that forms part of an area of green infrastructure comprising woods, a mill pond, watercourse and mill races and an area of mud flats. The proposal also includes restoration works and de-silting to improve the amenity and habitat value of the site as a whole.

- 2.6 The detail of the development proposals is shown on Drawing 2 within the Mearley Croft site boundary and is based on plan (planning layout b.dwg) supplied by the client.

3.0 TREE PRESERVATION ORDERS AND OTHER STATUTORY PROTECTION

Tree Preservation Orders & Conservation Area Designations

- 3.1 Consultation with Ribble Valley Council confirmed that at the time of the survey no trees on or immediately adjacent to the site were subject to Tree Preservation Orders or Conservation Area status.

Other Designations

- 3.2 Consultation with Ribble Valley Council confirmed that the majority of the site is designated as a Biological Heritage Site (BHS). According to Lancashire County Council Biological Heritage Sites are the most important non-statutory wildlife sites in Lancashire. They contain valuable habitats, provide a refuge for rare and threatened plants and animals and form an irreplaceable part of the environment. BHSs are a major part of the strategy to conserve the biological richness of Lancashire and will be considered in the determination of any application on any such site.

Protected Species

- 3.3 Mature trees often contain cavities, crevices and hollows that offer potential habitat for species such as bats and birds. Both are afforded protection under the Schedule 1 and 5 of the *Wildlife and Countryside Act 1981* (as amended), as well as under Schedule 2 of the *Conservation (Natural Habitats) Regulations 1994* (as amended).
- 3.4 Multistemmed willow trees often contain a significant range of cavities, cracks and split limbs that could support bats. A large number of trees surveyed on site therefore have features that are suitable for bat roosting and a specialist bat survey is recommended to support any works in Primrose Lodge
- 3.5 In the immediate development area a number of trees are also heavily ivy-clad. These should also be included in bat activity surveys prior to construction.
- 3.6 If the presence of a bat roost is suspected whilst undertaking any works on trees and groups on site, operations must be halted until a licensed bat handler or ecologist can provide advice.
- 3.7 Nesting birds, their nests and eggs are protected under the *Wildlife and Countryside Act 1981* (as amended). It is an offence to intentionally or recklessly, damage or destroy nests and all tree work should ideally be undertaken outside the bird nesting season (March to August inclusive).

- 3.8 If this is not possible then a detailed inspection of each tree should be undertaken by a qualified ecologist immediately prior to the arboricultural works. Should an active nest be found (being built, containing eggs or chicks) then any work likely to affect the nest must be halted until the nest becomes inactive.

4.0 TREE POPULATION & DEVELOPMENT IMPLICATIONS

Population

- 4.1 A schedule of all trees and tree groups in terms of species, condition, age, BS 5837:2005 quality category and management is provided at Appendix 1.
- 4.2 Tree and group locations, their quality categories and canopy spreads are shown on Drawing 1.
- 4.3 The survey area is a green link between the edge of Clitheroe – close to the countryside – and the historic town centre. As such, it represents a rare opportunity with enormous potential to be developed as a wildlife corridor with significant public amenity benefit.
- 4.4 Trees on the wider site (Primrose Lodge) as well as the application site (Mearley Croft) are described below to provide context to the application. There is no natural distinction between the two and both were originally surveyed together.

Primrose Lodge

- 4.5 Primrose Lodge forms a valley with flatter mud areas around Mearley Brook. Trees in woodland groups along the edges and upper slopes are very prominent landscape features, associated with the school, housing areas, allotments and industrial areas.
- 4.6 Trees towards the interior of Primrose Lodge are generally in poor or fair condition individually with many trees displaying multistemmed form or having stem wounds from vandalism or damage during flooding. Trees are causing the deterioration and collapse of a number of walls and built structures around the site and many trees, these included, are growing with unstable rooting conditions.
- 4.7 Primrose Lodge has a general air of neglect and large parts of the mudflats and river area are densely strewn with litter and rubble. Minimal or no tree works have been carried out across most of the site and the tree stock is in a state of disrepair, overgrowth and poor structure within the central corridor.
- 4.8 A number of small areas have been subject to more recent improvement works. These include new planting in a formal residential garden to the south of the site and the creation of an 'EcoZone' in the north of the site by the school, within which new planting areas, paths and educational infrastructure have been created.

- 4.9 An area of woodland to the centre east of the site appears to have been recently felled. It is unclear why this has been done. The loss of such a valuable feature close to the town centre is unfortunate and the significance of the site for wildlife and landscape value has been thereby increased.
- 4.10 Despite the poor condition and low individual value of many of the surveyed trees, the site clearly makes a very significant contribution to habitat and green infrastructure at a macro level. Collectively, the trees form a strong landscape feature with high future potential. The woodland areas, adjacent allotments, proximity to the countryside and waterbodies all reinforce the site's value for wildlife and trees define and support the structure of the site.
- 4.11 The woodland groups along the upper north-western bank and along the south eastern boundary are the highest value features in the survey area and contain the best individual specimens. One extends into the Mearley Croft area and both are prominent from the road. They contain larger trees that suggest historic tree cover in the area beyond that evidenced by the smaller individuals.

Mearley Croft

- 4.12 Trees within the wooded area were originally surveyed as a single woodland group (G28). After a period of 7 months data for individual trees and smaller groups was captured during a resurvey.
- 4.13 Initially, G28 was recorded as an A-Category feature. Under the subsequent assessment, A, B and C-Category trees and groups were recorded. This apparent disparity is consistent with the variety of components that would be expected to make up a healthy woodland group and does not undermine the validity of the initial assessment. Trees in G28 have a collective significance that exceeds the sum of the parts that should be considered both individually and holistically within the wider context.
- 4.14 The area is dominated by ash and sycamore with occasional birch, elder, hawthorn and wych elm. The species paucity offers an opportunity for improvements by way of interplanting to increase diversity.
- 4.15 The second survey offered an opportunity to reappraise T28 during a different season and to monitor it over time for changes in canopy health that could be attributed to internal decay. No deterioration was noted. It has a stem bulge that would be consistent with a tolerable internal cavity and following the resurvey, tree T28 was changed from B-Category to A-Category.
- 4.16 4 trees in the area (T30, T32, T36 and one tree in G37) are natural coppice stools. These look like clusters of young trees but are new growth from older, previously failed trees that are evidenced by the particular arrangement of stems, circular depressions, remnants of the large central stems and decaying wood in the soil. These trees have a high value as a niche habitat and also suggest historic tree cover beyond the apparent age of the majority of existing trees. It is possible that these trees were felled as no dead wood stems remain.

- 4.17 Trees along the boundary with Woone Lane form a prominent screen for the opposite houses and define the edge of the woodland area. They make a significant contribution to the character of the area and are generally adapted for growth in their location (asymmetric crowns and compensatory thickening of stems).
- 4.18 Trees within the detailed survey area form the edge of the group that is closest to Mearley Brook itself. Beyond this, tree cover is consistent with the change in habitat from woodland to a riparian system, comprising mainly multistemmed willow species. T43, T44, G39, G40 and G42 therefore define the edge of the riparian system habitat and are prominent from the site internally because of their size and height relative to the brook.
- 4.19 All trees in the area are prominent from within the site and from across the valley because of the land topography. Any loss of tree cover will have a significant effect on the character and appearance of the landscape from houses to the south east, a pub, playing fields and internal aspects.

Tree Quality Categorisation

- 4.20 Under *BS 5837:2005 Trees in Relation to Construction – Recommendations* trees and groups are objectively assigned a quality category to quantify their value. Table 1 presents a summary of the categorisation criteria presented in 'Table 1 – Cascade chart for tree quality assessment' of the British Standard. The full table has been reproduced at Appendix 2.
- 4.21 The British Standard system has been interpreted for the purposes of this report to accommodate surveys of individual trees and small groups within a woodland group belt. The quality categories given relate to the relative significance and value of individual trees and small groups *within the context of the wider group*. They should be used to estimate the potential impact of removing those individuals on the collective value of the group but not the wider landscape. The group as a whole is also assessed and categorised and the impact on the wider landscape of the removal of a significant proportion of trees is discussed.

Table 1: BS 5837:2005 tree quality categories

Category A	Trees of high value including those that are particularly good examples of their species and/or those that are visually dominant within the landscape
Category B	Trees of moderate value including those that do not qualify as Category A due to minor remedial defects and/or those that collectively form distinct landscape features, thereby attracting a higher rating than they might as individuals
Category C	Trees of low value that should not unreasonably constrain development
Category R	Trees unsuitable for long-term retention that should ideally be removed prior to the commencement of construction unless otherwise advised

Implications of the Proposed Development

- 4.22 Table 2 lists the BS 5837:2005 quality categories of trees that will require removal in order to facilitate the development proposals and those that can be retained. This is the result of an assessment based on the proposed site plan supplied by the client.

Table 2: Arboricultural implications of the proposed development

	Tree Quality Assessment Category/Retention Value			
	A	B	C	R
Trees and groups that can be retained	T10 T12 T15 (G28) G29 G30 G31 G32	T1 T2 T3 T5 T6 T7 T8 T9 T13 T14 T16 T18, T22 T24 , T25, T35 T36 T37 G4 G7 G9 G10, G13 G14 G16 G22 (G25) G35 (G36) G37	T4 T11 T17 T19 T20, T23 T34, G1 G2 G3 G5 G6, G8 G11 G12 G15 G20 (G26), G27	None
Trees and groups that require removal to facilitate development	T21, T26, T27 T28 (G28), G39	T29, T30, T31, T32, T33, T39 T40 T41, T42, T43, T44, G18 G19 G21 G23, (G25), G33, (G36) G40, G41, G44	T38, T45, G17, G24 (G26) G34, G38, G42, G43	None

¹See Appendix 1. Arboricultural Data Sheets for subcategories

²Tree groups in brackets are those that will be partially removed – See Drawing 2 for details

³Trees/groups shown in bold are those associated with the application site (Mearley Croft)

⁴Trees/groups shown in grey are those associated with the wider site (Primrose Lodge)

- 4.23 17 trees, 15 groups and some trees from 4 further groups must be removed to facilitate the proposed development.
- 4.24 The construction necessitates a flood mitigation excavation to the north. Groups G17, G18, G19 and part of G21 must be removed to facilitate this.
- 4.25 The tree removals comprise an area of total tree removal to facilitate the construction of the proposed dwellings. It would not be possible to retain any trees in this area under any form of residential development because of the existing slope and thereby required level changes and ground levelling.

- 4.26 The total area of tree cover that must be removed under the current proposals is approximately 0.68ha. The total area of tree cover that is included in total survey area for this report is approximately 3.36ha. However, some trees (particularly groups G31 and G32) were surveyed beyond either site boundary. Accordingly, the proportion of trees within the entire survey area that would be removed under the proposals is slightly increased. The development proposals would therefore require the removal of approximately 26% of tree canopy cover from the total combined site.
- 4.27 Approximately 0.06ha of canopy cover can be retained within the development area. This represents a loss of approximately 91% of tree cover.
- 4.28 The principal arboricultural implications of the proposals are the magnitude of canopy cover loss and the loss of green infrastructure and connectivity.
- 4.29 The loss of overall canopy cover and loss of the largest area of unbroken tree cover on the site represents a significant reduction in arboricultural value in terms of visual amenity, environmental and social benefits and habitat. The site is one of the largest green features within the developed parts of Clitheroe and the trees that would be removed under the proposals comprise a major structural component of the arboricultural infrastructure of the area.
- 4.30 The wholesale removal of an area of tree cover will have a significant detrimental effect on the wildlife corridor that is currently formed around Mearley Brook. This is a singularly valuable feature within the wider landscape and provides a unique green link between the countryside and Clitheroe centre. This connectivity would be diminished under the current proposals and could not be replaced or directly mitigated on a like-for-like basis.

Environmental Improvements

- 4.31 The proposed landscape improvement works across the wider site may also require some tree removals, however these would be informed by management recommendations made for the improvement of the site as a whole. No trees other than those in Table 2 must be removed in order to directly facilitate the construction of the proposed dwellings, road or infrastructure. Additional tree removals are likely to include some thinning works and the clearance of footpaths and pedestrian access areas. All such felling will be in the context of new planting and habitat regeneration and it is therefore considered that these are likely to *add* arboricultural value to the site and can therefore be discounted from a structured implications assessment.
- 4.32 Regeneration and landscaping proposals for the wider site should be informed by an arboricultural consultant.

5.0 TREE PROTECTION REQUIREMENTS

Root Protection Areas (RPAs) and Construction Exclusion Zones (CEZ)

- 5.1 As per *BS 5837:2005*, the **RPA** is calculated using the trees diameter at 1.5 metres (refer to Appendix 1) and represents the minimum area around each tree that must be left undisturbed to ensure their survival.
- 5.2 Tree roots typically spread two times the width of the crown. The majority of tree roots are found in the top 600 mm of soil and most of the fine roots that absorb water and nutrients are found in the top 100 mm.
- 5.3 The morphology of roots is influenced by past and present site conditions (the presence of roads, structures and underground services), soil type, topography and drainage. This means that a tree's roots may not be uniform in their extent and the **RPA** may not be a circular area centred on the tree stem.
- 5.4 The **RPA** shown on Drawing 1 are indicative only at this stage. It is used to inform the placement of protective fencing to define a **Construction Exclusion Zone (CEZ)** (refer to Drawing 2).

Protective Fencing

- 5.5 Protective barrier fencing will be required to demarcate a **CEZ** around retained trees in close proximity to proposed construction. This must be done prior to the commencement of any development works, including bringing machinery or materials onto site and the erection of site huts. Protective fencing alignment is shown on Drawing 2 and assumes that all trees identified for removal have been felled prior to installation.
- 5.6 Additional fencing may be required during the environment improvement works for operations such as footpath resurfacing and works to the built structures. These should be dealt with through Arboricultural Method Statements once the principle of development has been established.
- 5.7 The fencing must be fixed into the ground to withstand accidental impact from machinery and to ensure that a sufficient protective area is maintained. Details of the recommended Heras protective fencing are shown in Drawing 3.
- 5.8 Any alteration to the fencing alignment to allow for approved activities will be made in agreement with the Council's Arboricultural Officer.
- 5.9 The protective fencing must not be removed until the physical construction phase has been completed and all vehicles have been removed from site, to the satisfaction of the appointed Arboricultural Consultant.

Ground Contamination

- 5.10 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any trees on or within proximity the site due to the risk of soil contamination caused by accidental spillage.
- 5.11 If contamination does occur, then remediation advice should be sought from a qualified arboriculturist.

Underground Utility Issues

- 5.12 Guidelines set out in the National Joint Utilities Group publication *NJUG Volume 4, Guidelines for the Planning, Installation and Maintenance of Utility apparatus in Proximity to Trees* will be adhered to during excavation works close to or partially within RPAs.
- 5.13 NJUG Volume 4 can be downloaded free of charge from – <http://www.njug.org.uk>

6.0 ARBORICULTURAL RECOMMENDATIONS

Tree works

- 6.1 Table 3 (overleaf) provides a breakdown of the recommended tree works. These were identified during site surveys and make no reference to the development proposals (i.e. the works are recommended in the interests of good arboricultural management). Where trees or groups are agreed for removal under any planning consent, the respective works recommendation will cease to apply.
- 6.2 Where environmental and amenity improvements to the Primrose Lodge area are agreed as part of this application, additional arboricultural recommendations should be made. These are likely to include an increased level of risk management pruning, improvements to species diversity through new planting and the development of semi-formal amenity planting to delineate new site uses.
- 6.3 Hazard recommendations are based on observations at the time of survey. Trees are dynamic living organisms whose structure is constantly changing. Even those in good condition can suffer from damage or stress. Following site development, regular (annual or biennial) inspections of all retained trees should be undertaken by a qualified arboriculturist.

Table 3: Priority arboricultural works

Tree or Group Reference Number	Works Required
T1	Remove compost heap
T2	Remove rubble. Remove smaller basal stems
T6	Remove ropes and defective branches
T7	Tidy up pruning stubs
T8	Clear up failed limb and reduce crown over waterways
T17	Monitor condition and consider replacement if tree deteriorates
T18	Tree may need to be removed in order to restore structure
T21	Remove rubble
G1	Remove tree by wall
G7	Difficult to restore wall and keep trees - could repair around them or re-plant in phases to maintain canopy cover
G9	Clear out channel
G10	Clear up rubbish and de-silt area. Re-flooding area would suit tree stock
G12	Remove group
G17	Plant new trees. Monitor existing trees for any developing hazards until new trees are established
G18	Remove rubble
G19	Remove deadwood
G21	Thin regeneration and select best specimens for retention
G24	Clear up area. Replace unstable and failed trees
G26	Consider re-flooding area. Clear up litter
G27	Clear litter
G28	Clear litter. 10% thin, removing specimens with poor form and condition. Selectively thin denser areas by up to 30%
G29	Monitor for any instability and remove trees if they show signs of unacceptable basal movement
G32	Reduce ash with large basal cavity to a 6m stem

Arboricultural Method Statements

- 6.4 The construction activities associated with level changes, gardens for the proposed dwellings and areas of hard surfacing close to retained trees will require an Arboricultural Method Statement (AMS).
- 6.5 Improvement works across the Primrose Lodge site would also require additional arboricultural input in the form of AMS drawings to detail processes such as restoration of built structures, installation of new footpaths and tree planting in proximity to existing trees.
- 6.6 An AMS details special mitigation construction and procedures that will minimise damage to tree roots and the surrounding soil. Special mitigation construction works are likely to require more time and proprietary materials, thus early consultation and discussion with an appropriately qualified arboriculturalist when detailing plans will help with resource allocation.

Mitigation Landscaping and Post Development Management

- 6.7 It will not be possible to directly mitigate for the proposed removal of trees within the site. There is insufficient space within the site to replace lost trees at a 1:1 ratio. The loss of green infrastructure that is currently provided by the belts of trees is associated with the change of land use from woodland to residential and cannot therefore be mitigated on a like-for-like basis.
- 6.8 Mitigation for the loss of arboricultural value on the site will necessarily include two components; improvements to the remaining post-development tree stock and non-arboricultural improvements to the site.
- 6.9 Some arboricultural mitigation can be achieved through a robust new planting scheme around the proposed dwellings. This should create as high a proportion of tree cover and green infrastructure as possible within developed areas. To achieve an acceptable level of planting, atypical planting methods and additional arboricultural input will be required prior to construction.
- 6.10 The choice of replacement trees should include species of varied ultimate size and height, incorporating where possible the larger tree species with the potential to provide benefit beyond their immediate environment and to a more diverse range of ecology. Large trees provide proportionally greater benefits than smaller trees and can justifiably be used to mitigate for the removal of a number of small trees, depending on the current and projected size.
- 6.11 Aftercare is vital to the survival of newly planted trees. Provision should be made for the maintenance of newly planted trees and include watering, formative pruning and the checking of tree ties and stakes.

- 6.12 A level of arboricultural mitigation could also be provided through works across the wider site to significantly improve the currently poor quality tree stock in those areas. Improved species diversity, more large trees, public access to areas of tree cover, hazard abatement works and semi-formal amenity planting would increase or introduce value to the site.
- 6.13 Significant non-arboricultural improvements are proposed across the wider site. These include de-silting works, footpath creation and litter clearance. These works would increase public access to trees, increase the habitat potential of the remaining trees and increase the future growth potential and long-term sustainability of some parts of the tree stock.
- 6.14 Trees within the Mearley Croft site form a structural component of the wider site and have particular value in terms of connected canopy cover and green infrastructure. The Primrose Lodge site contains a significant proportion of mud flats that would not be capable of supporting comparable replacement planting. In addition, the narrow dimensions of the combined sites prevent any significant increase in green connectivity by new planting following the clear felling of the Mearley Croft area. It will therefore not be possible to mitigate by replacement of the removed trees from Mearley Croft within the combined sites.
- 6.15 It will ultimately be for the LPA to determine whether the net loss of arboricultural value associated with the proposals can be mitigated indirectly by an increase in other types of value across the wider site that result from the proposed improvement works. While an overall reduction in arboricultural value has been determined and described, it is beyond the professional remit of this report to assess the potential to offset this loss with other gains elsewhere.

7.0 SUMMARY

- 7.1 Based on an objective assessment made in accordance with *BS 5837:2005 Trees in Relation to Construction – Recommendations*, there are 13 Category A, 49 Category B and 27 Category C features within the survey area.
- 7.2 Primrose Lodge contains large areas of low value scrub and trees commensurate with an unmanaged riparian system and large belts of high value woodland groups and high and moderate value trees along the site boundaries.
- 7.3 Mearley Croft (development site) is within a broadleaved woodland belt. It contains a range of tree sizes, forms and values, commensurate with a functioning ecosystem as well as some residential garden. 17 trees, 15 tree groups and parts of a further 4 groups must be removed to facilitate the proposed development. 3 trees can be retained in the site.
- 7.4 At the time of the survey no trees within or immediately adjacent to the site were subject to Tree Preservation Orders or within a Conservation Area. The site is a Biological Heritage Site (excluding the residential gardens) (see Section 3.2).
- 7.5 A range of tree works are recommended in the interests of sound arboricultural management (see Section 6).
- 7.6 Bat activity surveys should be undertaken across the site with particular regard for the large or ivy-clad trees in group G28 and the numerous riparian willow trees containing cracks and cavities.
- 7.7 The proposed tree removals comprise approximately 26% of canopy cover across the combined Mearley Croft and Primrose Lodge sites. The proposals require the loss of approximately 91% of canopy cover in the development area. The principal mode of arboricultural impact will be through loss of overall canopy cover and loss of green infrastructure and connectivity.
- 7.8 Protective barrier fencing will be required to demarcate a Construction Exclusion Zone (CEZ) around three retained trees and one group prior to the commencement of development. Fencing alignment is shown on Drawing 2 and details of the recommended Heras fencing are shown on Drawing 3
- 7.9 An Arboricultural Method Statement (AMS) will be required for works associated with boundary treatments, level changes and new surfaces. It will detail special construction and procedure to minimise damage to tree roots and the soil.
- 7.10 Direct replacement for or mitigation of the loss of trees and associated habitats will not be possible within either the Mearley Croft or Primrose Lodge sites. New planting and improvements to the remaining tree stock can be used to diminish the net arboricultural disbenefit by widening tree function and adding value in some areas. The LPA must determine whether other improvements or off-site contributions can be used to offset the remaining loss within the wider context of planning policy and land-use objectives.

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APPENDIX 1

ARBORICULTURAL DATA SHEETS

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APPENDIX 1: Arboricultural Survey Data Sheets

Surveyor TP

Date March/October 2011

Town Clitheroe

Site Marley Brook and Primrose Lodge

Dwg Ref D3116.001



Ref	Species	Height (m)	Stem Dia. (mm)	No. of stems/individuals	Crown Spread North (m)	Crown Spread South (m)	Crown Spread East (m)	Crown Spread West (m)	Height of Lowest Branch (m)	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess. (1,2,3)	Radius of RPA guide circle (m)	BS5837 RPA	Management Recommendations	Estimated Remaining Contribution
T1	Ash	7.0	280.0	1.0	5.0	4.0	4.0	4.0	2.0	Middle Age	Good	Located close to school, next to river with limited rooting area. There is a compost heap on roots around main stem. Main stem has a minor lean and some stem wounds.	B,2,3	3.4	35.5	Remove compost heap.	Long
T2	Ash	8.0	460.0	3.0	6.0	5.0	6.0	4.0	1.0	Middle Age	Fair	Basally multi-stemmed with one dominant stem. Rubble in rooting area. Girdling roots. Bifurcate at mid-stem with a compression fork forming. Located close to school.	B,2,3	4.6	66.5	Remove rubble. Remove smaller basal stems.	Long
T3	Ash	9.0	500.0	1.0	6.0	5.0	5.0	5.0	3.0	Middle Age	Good	Located close to school, next to wall. Bifurcate mid-stem. Minor basal cavity and slight lean. Bird boxes.	B,1,2,3	6.0	113.1		Long
T4	Goat Willow	6.0	400.0	8.0	4.0	4.0	4.0	4.0	1.0	Middle Age	Fair	Multi-stemmed riverside tree.	C,1	4.0	50.3		Medium
T5	Ash	17.0	1090.0	1.0	8.0	7.0	8.0	6.0	1.0	Mature	Fair	Veteran size tree. Dense crown with previous branch failures. Located by playing field. Basal stem and branch cavities. Bird boxes.	B,1,2	13.1	537.5		Medium
T6	Sycamore	10.0	600.0	1.0	5.0	5.0	4.0	5.0	1.0	Middle Age	Good	Vandalism and rope on branches. Some rubble at base and soil compaction. Good crown with no defects. Basal epicormic growth.	B,1,2	7.2	162.9	Remove ropes and defective branches.	Long
T7	Beech	7.0	380.0	1.0	4.0	4.0	4.0	4.0	2.0	Middle Age	Good	Next to playing field path. Some stem wounds and poor pruning. Good form and future potential. Bird box.	B,1,2	4.6	65.3	Tidy up pruning stubs.	Long
T8	Ash	15.0	1090.0	1.0	9.0	6.0	7.0	8.0	3.0	Mature	Fair	Large tree next to field. Recent failure onto sluice gates. Minor lean to the North. Lifting bark on main stem. Large cavity on uphill side (South) and underside of branch.	B,2,3	13.1	537.5	Clear up failed limb and reduce crown over waterways.	Medium
T9	Sycamore	12.0	750.0	1.0	6.0	6.0	6.0	6.0	2.0	Middle Age	Fair	Bifurcate mid-stem. Stem wounds. Basal cavity and wound. Impaired condition but long term potential.	B,1,2	8.0	254.5		Long
T10	Ash	7.0	260.0	1.0	4.0	4.0	4.0	4.0	1.0	Middle Age	Good	Good form and future potential. No wounds or visible defects.	A,1	3.4	35.5		Long
T11	Ash	7.0	500.0	2.0	6.0	5.0	4.0	5.0	2.0	Middle Age	Poor	Basally bifurcate with one stem removed. Basal epicormic growth. Stripped bark on both stems.	C,1,2	5.0	78.5		Medium
T12	Sycamore	12.0	2000.0	10.0	6.0	6.0	6.0	6.0	1.0	Middle Age	Good	Multi-stemmed bank tree by channel. Odd pocket cavities and exposed roots.	A,2	20.0	1256.6		Long
T13	Ash	8.0	530.0	2.0	5.0	4.0	4.0	3.0	1.0	Middle Age	Fair	Bifurcate but with good union. Growing from wall top. Visible feature from road.	B,2	5.3	88.2		Medium
T14	Weeping Willow	4.0	160.0	1.0	4.0	3.0	2.0	2.0	2.0	Middle Age	Good	Formal garden planting with no significant defects.	B,1,3	1.9	11.5		Long

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APPENDIX 1: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA	Management Recommendations	Estimated Remaining Contribution
T15	Silver Birch	10.0	330.0	1.0	3.0	1.0	2.0	2.0	4.0	Middle Age	Good	Formal garden planting - prominent tree. Minor lean to North.	A.1.2	4.0	49.3		Long
T16	Downy Birch	9.0	250.0	1.0	3.0	3.0	3.0	3.0	4.0	Middle Age	Good	Formal garden planting - prominent tree. Minor reduced vigour.	B.1.2	3.0	28.3		Long
T17	Goat Willow	8.0	420.0	1.0	4.0	4.0	4.0	4.0	1.0	Mature	Fair	Prominent boundary feature. Basal suckering. Precious features - tree in decline. Large basal flare and stem cavity.	C.1.2	5.0	79.8	Monitor - potential removal.	Short
T18	Goat Willow	8.0	250.0	1.0	4.0	3.0	3.0	3.0	1.0	Middle Age	Good	Small tree next to bridge and outflow. Prominent feature - reasonable spaces choice for location.	B.2	3.0	28.3	Tree may be in the way if structure is to be reconditioned.	Medium
T19	Weeping Willow	4.0	90.0	1.0	1.0	2.0	2.0	1.0	1.0	Middle Age	Good	Small garden tree.	C.1.2	1.1	3.7		Long
T20	Ash	5.0	120.0	1.0	1.0	1.0	1.0	1.0	1.0	Middle Age	Fair	Small self-set group by derelict buildings. Poor ground conditions.	C.1	1.4	6.5		Medium
T21	Ash	9.0	340.0	1.0	5.0	5.0	5.0	5.0	1.0	Middle Age	Good	Good individual tree with balanced crown. Good future potential with no visible defects. Poor soil.	A.1.2	4.1	52.3	Remove rubble.	Long
T22	Ash	10.0	640.0	3.0	5.0	6.0	4.0	7.0	2.0	Middle Age	Fair	Larger tree than surrounding examples. Tree is lifting wall. Basally trifurcate with one dominant stem. Epicormics in crown and broad form.	B.1.2	6.4	128.7		Long
T23	Goat Willow	5.0	310.0	2.0	6.0		4.0		1.0	Middle Age	Fair	Stem flat on ground. Suited to location and causing no structural damage.	C.1.3	3.1	30.2		Medium
T24	Ash	9.0	380.0	3.0	5.0	6.0	5.0	6.0	1.0	Middle Age	Fair	Basally trifurcate on old wall line. Moderate deadwood. Reduced vigour on some limbs. Basal bulge - possible internal cavity.	B.2	3.9	47.8		Medium
T25	Crack Willow	13.0	400.0	1.0	3.0	4.0	4.0	3.0	2.0	Middle Age	Good	Tall tree in dense bushes. Well suited to location. Minor cracking on main stem.	B.1.2	4.8	72.4		Long
T26	Ash	16.0	1010.0	1.0	9.0	9.0	8.0	5.0	4.0	Mature	Good	Mature tree in woodland group C28. Near to overhead cables. Moderate dead wood. Minor stem crack or stem torsion internal to stem but evidenced by bark detachment. No major defects. Daldinia on dead wood. Minor reduction in crown density and condition.	A.2.3	12.1	461.5		Long
T27	Sycamore	14.0	800.0	1.0	6.0	6.0	5.0	5.0	4.0	Middle Age	Good	Mid-stem bifurcation with good union. Larger tree than those in surrounding area.	A.2.3	9.6	289.5		Long
T28	Sycamore	14.0	840.0	1.0	6.0	7.0	7.0	4.0	5.0	Middle Age	Fair	Mid-stem bifurcation with reasonable union. Weighted downhill (east). Large buttresses, probably indicating internal cavity at base.	A.2.3	10.1	319.2		Long
T29	Sycamore	12.0	800.0	4.0	3.0	4.0	5.0	5.0	3.0	Middle Age	Fair	Basal multistem with reasonable form.	B.3	6.0	113.1		Long
T30	Sycamore	12.0	700.0	10.0	4.0	3.0	6.0	5.0	1.0	Mature	Good	Old natural coppice stool with hollow centre, excellent niche habitat.	B.1.3	7.0	153.9		Long
T31	Ash	13.0	210.0	1.0	5.0	5.0	2.0	2.0	6.0	Middle Age	Good	Single stemmed tree with good potential; on edge of woodland; screening value; previous failure of bifurcation has good woundwood growth.	B.1.2.3	2.5	20.0		Long

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APPENDIX 1: Arboricultural Survey Data Sheets

Ref	Species	Height (m)	Stem Dia. (mm)	No. of stems/individuals arising below 1.5m	Crown Spread North (m)	Crown Spread South (m)	Crown Spread East (m)	Crown Spread West (m)	Height of Lowest Branch (m)	Maturity Young, Middle Age, Mature, Veteran	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle (m)	BS5837 RPA	Management Recommendations	Estimated Remaining Contribution
T32	Sycamore	14.0	600.0	6.0	4.0	4.0	4.0	4.0	1.0	Middle Age	Good	Old natural coppice with remnant stump; deadwood habitat; stems individually rooted; excellent niche habitat	B,1,3	6.0	113.1		Long
T33	Ash	13.0	260.0	1.0	6.0	1.0	3.0	3.0	6.0	Middle Age	Good	Slender tree with asymmetry over road; good potential for future contribution to woodland edge	B,1,2,3	3.1	30.6		Long
T34	Sycamore	7.0	160.0	1.0	2.0	1.0	1.0	1.0	2.0	Middle Age	Fair	Small tree by wall with numerous pruning wounds	C,1	1.9	11.5		Medium
T35	Sycamore	16.0	660.0	2.0	6.0	6.0	5.0	5.0	3.0	Middle Age	Good	Bifurcate tree touching wall; on boundary; minor union inclusion; will continue to damage wall if left but tree has good form and balanced crown; large feature in area with prominent position and screening value on edge of woodland	B,1,2,3	6.6	136.8		Long
T36	Ash	8.0	400.0	5.0	4.0	2.0	3.0	3.0	1.0	Mature	Fair	Small trees; one leaning at 45 degrees; contribution to wider woodland feature; leaning stem growing from old natural coppice stool; excellent niche habitat	B,3	4.0	50.3		Medium
T37	Silver birch	16.0	230.0	1.0	2.0	2.0	2.0	2.0	7.0	Middle Age	Good	High canopy; no lower branches; good form and potential; good value as additional species in area of limited diversity	B,1,2,3	2.8	23.9		Long
T38	Ash	8.0	260.0	2.0	5.0	1.0	7.0	1.0	2.0	Middle Age	Poor	Pan-failed tree with lean to east; evidence of recent root plate movement; crown epicormics; good habitat value; bifurcate	C,1,3	2.8	24.6		Short
T39	Sycamore	16.0	210.0	1.0	2.0	3.0	3.0	3.0	6.0	Middle Age	Good	Tall and slender with no significant defects	B,1,3	2.5	20.0		Long
T40	Sycamore	17.0	360.0	1.0	5.0	5.0	5.0	5.0	4.0	Middle Age	Good	Excellent form and potential	B,1,3	4.2	55.4		Long
T41	Sycamore	16.0	320.0	1.0	4.0	5.0	1.0	5.0	5.0	Middle Age	Good	Minor asymmetry; good form and potential; no significant defects	B,1,3	3.8	46.3		Long
T42	Sycamore	17.0	700.0	3.0	3.0	5.0	6.0	6.0	3.0	Middle Age	Fair	Basally bifurcate tree with large wound on stem with some decay; full crown with no symptoms; reasonable woodland formation; tight union but stems independently rooted	B,2,3	7.0	153.9		Long
T43	Ash	15.0	350.0	1.0	1.0	7.0	3.0	5.0	2.0	Middle Age	Good	Asymmetric tree with minor inclusion at mid-stem bifurcation; good potential; edge tree defining boundary of riverine system	B,1,2,3	4.2	55.4		Long
T44	Sycamore	16.0	660.0	1.0	5.0	8.0	3.0	5.0	1.0	Middle Age	Good	Stem wound at 0.5 to 1m including well; crown asymmetry but no significant defects	B,1,2,3	6.7	141.9		Long
T45	Sycamore	12.0	280.0	2.0	2.0	2.0	2.0	1.0	1.0	Middle Age	Fair	Two stems, fused at 1m; poor slender growth form	C,1,3	2.8	24.5		Medium
Groups																	
G1	Ash	4.0	90.0	3.0					1.0	Young to Middle Age	Good	Three small trees by school access point. No significant defects. One is at wall base.	C,1		See Drawing D3116.001	Remove tree by wall.	Long
G2	Alder, Ash, Elder, Goat Willow	6.0	180.0	10+					1.0	Young	Fair	Group of small trees and scrub. Around seating area.	C,1,3		See Drawing 3116.001		Medium

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature, Veteran	Good, Fair, Poor		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short
G3	Apple, Oak, Willow	8.0	170.0	7.0					1.0	Young to Middle Age	Good	School students tree planting project. Some trees are staked.	C,1,3		See Drawing 3116.001		Long
G4	Ash, Elder, Hawthorn, Sycamore	11.0	650.0	10+					1.0	Middle Age	Fair	Important landscape feature individual trees in variable condition. Stem wounds and multi-stemmed poor form. Dense group. Sycamore to east are the best specimens. Bird boxes.	B,2,3		See Drawing 3116.001		Medium
G5	Alder, Birch, Oak, Willow spp.	5.0	100.0	10+					1.0	Young	Good	New planting around Exercise Trail. Good future potential.	C,1,3		See Drawing 3116.001		Long
G6	Ash, Elder, Hawthorn	5.0	150.0	8.0					1.0	Middle Age	Poor	Small scrappy trees with stripped bark. Rubbish around trees.	C,1		See Drawing 3116.001		Short
G7	Alder, Ash, Hawthorn, Sycamore	14.0	600.0	10+					1.0	Middle Age	Fair	All trees on or by banks/walls, causing deterioration of structure/collapse. Poor form in places. Strong linear feature.	B,2		See Drawing 3116.001	Difficult to restore wall and keep trees - could repair around them or remove trees and re-plant in phases.	Medium
G8	Ash, Sycamore	7.0	180.0	10+					1.0	Middle Age	Fair	Small trees on wall/bank, plus one on field boundary. Dense group of slender trees.	C,1,3		See Drawing 3116.001		Medium
G9	Ash, Crack Willow, Goat Willow, Guelder Rose, Hawthorn, Sycamore	12.0	450.0	10+					1.0	Young to Middle Age	Fair	Linear bank top feature. Trees on channel wall, some causing wall damage. Multistemmed and bowed stems. No individually good trees. Group becomes scrubby, dense and tangled to the South.	B,2,3		See Drawing 3116.001	Clear out channel.	Medium
G10	Crack Willow, Goat Willow	9.0	600.0	10+					1.0	Middle Age	Fair	Willow is dominant feature in typical form and condition - no individually valuable trees. Many multi-stemmed and stem failures. Scrub around river and mudflats. Good wildlife habitat value. Lots of rubbish. Himalayan Balsam.	B,3		See Drawing 3116.001	Clear up rubbish and desalt area. Re-flooding area would suit tree stock with raised walkway over water if access required in area.	Medium
G11	Crack Willow	6.0	250.0	10+					1.0	Young to Middle Age	Fair	Group of small basally multi-stemmed trees on mudflats. Himalayan Balsam. Mainly of wildlife value.	C,3		See Drawing 3116.001		Medium
G12	Alder, Ash, Beech, Hawthorn, Sycamore, Weeping Willow	8.0	200.0	10+					1.0	Young	Fair	Scrub on dam wall and surrounding structures. Dense group of multi-stemmed trees. Three taller Ash stems at wall edge. One planted beech with stake and tie is a little out of place with limited rooting area and low future potential.	C,1,2		See Drawing 3116.001	Remove group.	Medium
G13	Birch, Cypress, Fr. Ornamental Conifers	7.0	250.0	11.0					1.0	Middle Age	Good	Formal manicured garden feature. One tree potted. Domestic garden of value to owners.	B,2,3		See Drawing 3116.001		Long
G14	Sycamore	11.0	340.0	5.0					1.0	Middle Age	Fair	Seven stems touching wall - two felled and are resprouting. Trees are not presently causing damage but may disturb wall in the future. Viable from school. Some minor vandalism.	B,2		See Drawing 3116.001		Medium
G15	Ash, Hawthorn, Sycamore	6.0	360.0	10+					1.0	Middle Age	Poor	Trees on wall and bank edge. One dead tree. Broken stems, major canker, low vigour, stem wounds.	C,1		See Drawing 3116.001		Medium

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				erising below 1.5m						Young, Middle Age, Mature, Veteran	Good, Fair, Poor		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short
G16	Ash, Sycamore	10.0	330.0	4.0					1.0	Middle Age	Fair	Three trees in group. One tree (Sycamore) is bifurcate. One tree has stem wound. The other has a minor reduction in vigour. Reasonable potential.	B,2		See Drawing 3116.001		Medium
G17	Ash, Hawthorn, Horse Chestnut, Sycamore	12.0	800.0	2.0					1.0	Middle Age	Poor	Low quality trees. Included unions, vandalism, major bark removal, large stem cavities, basally multi-stemmed. Lots of small Ash regeneration.	C,1,2,3		See Drawing 3116.001	Plant new trees. Monitor existing trees for hazard abatement until new trees are established.	Medium
G18	Sycamore	10.0	470.0	2.0					1.0	Middle Age	Fair	Asymmetric specimens with reasonable future potential.	B,1,2,3		See Drawing 3116.001	Remove rubble.	Long
G19	Alder, Ash, Hawthorn, Sycamore	11.0	650.0	10+					1.0	Middle Age	Fair	Prominent landscape trees. Bankswall trees causing damage. Included unions, Vandalism - bark damage.	B,2,3		See Drawing 3116.001	Remove deadwood.	Medium
G20	Ash	11.0	560.0	3.0					1.0	Middle Age	Poor	Next to derelict garages. Two trees with large areas of bark missing. One heavily crown raised tree.	C,2,3		See Drawing 3116.001		Medium
G21	Ash	10.0	260.0	10+					1.0	Middle Age	Good	Dense group of regeneration with some larger saplings. Regeneration is likely to be affording some protection to larger trees in better land than surrounding area. Dense group in places but could be thinned to retain better specimens.	B,1,2,3		See Drawing 3116.001	Thin regen. and select best specimens.	Long
G22	Alder, Ash	11.0	700.0	8.0					1.0	Middle Age	Fair	Three bankswall trees with poor form and rooting. Damage to wall. Linear feature of mainly landscape value. Prominent from houses.	B,2		See Drawing 3116.001		Medium
G23	Ash, Leyland Cypress, Sycamore	11.0	430.0	10+					1.0	Middle Age	Fair	Row of trees - former garden bottom. Some trees multi-stemmed and of poor form but generally ok.	B,1,2		See Drawing 3116.001		Long
G24	Ash, Crack Willow	13.0	500.0	10+					1.0	Middle Age	Poor	Larger trees in poor condition. Stem wounds, cavities, canker, leaning stems, cracks. Daldinia concentrica fungus. Himalayan Balsam and rubbish around base.	C,1,2		See Drawing 3116.001	Clear up area - probably remove all trees.	Short
G25	Ash, Cherry, Elder, Fir, Leyland Cypress	13.0	450.0	10+					1.0	Middle Age	Fair	Garden trees and shrubs. Of wildlife value but not individually valuable. Evidence of nesting.	B,2,3		See Drawing 3116.001		Long
G26	Ash, Crack Willow, Goat Willow	6.0	200.0	10+					1.0	Young to Middle Age	Fair	Group of basally multi-stemmed trees on mudflats. Many failures. Individual trees low value but good wildlife habitat.	C,2,3		See Drawing 3116.001	Consider re-flooding area. Clear up litter.	Long
G27	Goat Willow, Crack Willow	6.0	150.0	10+					1.0	Middle Age	Fair	Odd trees on mudflats. Low value.	C,1		See Drawing 3116.001	Clear litter	Medium

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G28	Sycamore, Ash, Hawthorn, White Poplar, Elder, Cherry, Silver Birch, Oak, Willow, Crack Willow, Holly	12.0	550.0	10+					1.0	Young to Middle Age	Fair	Woodland group with dominant sycamore and ash. Sycamore dominance mainly in north-east and ash dominance mainly in south- west. Some multistemmed trees but plenty of good trees with future potential. On sloping bank. Rubble and litter in area. Trees overhanging road at bank top. Individual trees with moderate value but collectively forming a key landscape feature by residential area. Increasingly steep and inaccessible to the south-west. Some trees damaging wall or likely to cause future damage. Good groundcover cover. Ivy. A key feature, defining the road and edge of the site. Highly visible from surrounding landscape.	A,2		See Drawing 3116.001	Clear litter, 10% thin, removing specimens with poor form and condition. Selectively thin denser areas by up to 30%	Long
G28	Sycamore, Ash	14.0	750.0	10+					1.0	Middle Age	Fair	Larger trees on very steep bank and by river. Some bifurcate and multistemmed forms with poor unions. Trees would be at water's edge when the river is in spate. Roots stabilising bank. Part of woodland area G28.	A,2		See Drawing 3116.001	Monitor for any instability and remove trees if they show signs of unacceptable basal movement	Medium
G30	Sycamore	13.0	750.0	2.0					1.0	Middle Age	Fair	Pair of ivy-clad trees. Good distance from road. On stable ground. Forming one canopy. Good feature with potential. Canopy slightly patchy in places.	A,2		See Drawing 3116.001		Long
G31	Ash, Alder, Sycamore, Hawthorn, Beech, Elder	16.0	800.0	10+					1.0	Middle Age to Mature	Good	High value woodland group. Good groundcover and large dead trees contributing to woodland ecology. Feature at the bottom of and incorporating residential gardens. High wildlife value and many individually high value trees. Very prominent feature defining site boundary and visible from many aspects. Ivy-clad trees and moss and fern populations.	A,1,2,3		See Drawing 3116.001		Long
G32	Ash, Hawthorn, Sycamore, Elder	18.0	800.0	10+					1.0	Middle Age to Mature	Fair	Generally in good condition but with one or two trees with larger defects or reduced vigour. Line of trees along the site boundary and by an area of recently felled woodland. Very prominent feature containing the tallest trees on the site. Visible from multiple aspects and value increased by removal of adjacent trees in woodland area. Large basal cavity on ash tree. Large multistemmed sycamores on bank by water. North-easternmost two ash trees are tallest trees and prominent from distance.	A,2,3		See Drawing 3116.001	Reduce ash with large basal cavity to a 6m stem	Medium

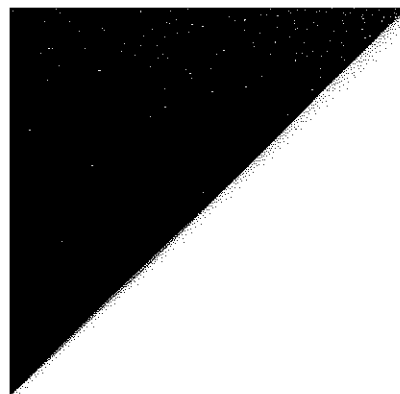
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Ref	Species	Height (m)	Stem Dia. (mm)	No. of stems/individuals	Crown Spread North (m)	Crown Spread South (m)	Crown Spread East (m)	Crown Spread West (m)	Height of Lowest Branch (m)	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle (m)	BS5837 RPA	Management Recommendations	Estimated Remaining Contribution
G33	Sycamore	13.0	to 470	10.0					1.0	Middle Age	Good	Excellent screening; growing by wall; overhead wires; reasonable form	B,1,2,3		See Drawing 3116.001		Long
G34	Sycamore, ash	8.0	to 150	10+					1.0	Young to Middle Age	Fair	Scrappy regenerative growth; screening value and contribution to wider woodland feature	C,1,2,3		See Drawing 3116.001		Long
G35	Sycamore, ash, wych elm	16.0	580.0	12.0					1.0	Middle Age	Good	Slender form; three multistemmed trees, one with mid-stem bifurcation, three single stemmed; excellent screening and contribution to wider feature; structural component of wood; single stemmed trees in group are well-spaced and have good potential	B,1,2,3		See Drawing 3116.001		Long
G36	Ash	15.0	to 310	5.0					5.0	Middle Age	Good	Five boundary trees; close to wall; some slender form; surface roots	B,1,2,3		See Drawing 3116.001		Long
G37	Sycamore	16.0	600.0	7.0					3.0	Middle Age	Good	One basally bifurcate and one basally trifurcate tree; good woodland form; northern tree appears to be undercut (possible animal burrow or gap left by decayed adjacent stump); good form and potential	B,1,2,3		See Drawing 3116.001		Long
G38	Sycamore, ash	14.0	480.0	5.0					3.0	Middle Age	Fair	Two basally bifurcate trees; as with good form and potential; sycamore has poor root formation and significant stem bow; ash with moderate dead wood	C,1,2		See Drawing 3116.001		Medium
G39	Wych elm, sycamore, ash	16.0	to 650	13.0					1.0	Middle Age	Fair	Excellent microcosm of woodland ecology containing trees of every life stage in one small group; large failed habitat pole with remaining stump to 1.5m containing significant insect and fungal activity; good mix of species and form; high wildlife value; epicormics on ash; sycamore by outflow pipe the largest tree; fungi on dead wood; irreplaceable habitat and no significant defects	A,3		See Drawing 3116.001		Long
G40	Sycamore	16.0	to 470	3.0					3.0	Middle Age	Good	Three trees; defining edge of riverine system; no significant defects; minor squirrel damage and basal epicormics	B,1,2,3		See Drawing 3116.001		Long
G41	Sycamore, ash	15.0	to 480	20.0					1.0	Middle Age	Good	All trees in group very similar; rubble in area; close spacing; woodland form; one ash; good form and potential; forming a structural component of the woodland compartment	B,1,2,3		See Drawing 3116.001		Long
G42	Sycamore, ash	14.0	to 550	8.0					1.0	Young to Middle Age	Good	Small group of trees; crown asymmetry; defining woodland edge from river side; one basal multistem with good union formation; some crown epicormics; no significant defects	C,1,2,3		See Drawing 3116.001		Long

APPENDIX 1: Arboricultural Survey Data Sheets

Ref	Species	Height (m)	Stem Dia. (mm)	No. of stems/individuals	Crown Spread North (m)	Crown Spread South (m)	Crown Spread East (m)	Crown Spread West (m)	Height of Lowest Branch (m)	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle (m)	BS5837 RPA	Management Recommendations	Estimated Remaining Contribution
G43	Ash; elder	15.0	(mm) to 200	arising below 1.5m 10+	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature, Vegetan	Good, Fair, Poor	Densely packed group of mainly small stems with occasional larger stems in a broadly linear group (possibly a boundary line); some tall and slender form due to spacing and woodland growth; one elder in poor condition; good screening value/forming edge of woodland visible from houses	A,B,C,R (1,2,3)	(m) (m2)	See Drawing 3116.001		Long, Medium, Short
G44	Ash, sycamore	17.0	to 700	12.0					1.0	Young to Middle Age	Good	Very prominent edge group, defining woodland from adjacent houses' aspect and also prominent from road along woodland boundary to north; one larger sycamore previously removed and sprouting from stump; ivy-clad stems; previous pruning, some unsympathetic (possibly by residents); removal of large sycamore to north has left some slender woodland form trees on new edge but no significant defects; some basal epicormics and evidence of epicormic cutting; basally bifurcate trees in group; ash stumps resprouting; very prominent and generally healthy screen	B,2,3		See Drawing 3116.001		Long

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APPENDIX 2

SURVEY METHODOLOGY

APPENDIX 2: ARBORICULTURE SURVEY METHOD

Arboricultural surveys are conducted from ground level only. The nature of the soils on site is not assessed during the survey. The possibility of minor soil movement due to the root activity of the trees cannot be discounted; therefore, the advice of a structural engineer should be sought with regard to appropriate foundation depths.

Trees are dynamic living organisms with a constantly changing structure; even trees in good condition can suffer from damage or stress. Regular annual or bi-annual inspections by a qualified arboriculturalist can help to identify potential problems before they become acute.

The following features of each tree, group of trees or wood may have been recorded in the Arboricultural Data Sheets (Appendix One).

Species	The common name is given. The Latin name may also be given if further clarification is required.	
Height	Top height of tree recorded in metres.	
Stem Diameter	For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres.	
	For multi-stemmed trees the measurement is taken directly above the root flare in millimetres.	
	For tree groups the measurement is taken in the same way as with single-stemmed trees and is recorded in millimetres as a range from minimum to maximum diameters.	
No. of Stems	A count of stems arising below a height of 1.5m.	
Crown Spread	The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape	
Height of Lowest Branch	Crown clearance above ground level recorded in metres.	
Tree Age	Young	Trees that can reasonably be relocated or replaced like for like, without undue cost;
	Middle Age	Trees in the established growth stage of their life with the potential to continue increasing in size;
	Mature	Trees that have reached their ultimate size, given their location and surroundings;
	Veteran	A tree recognised by features of a biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Condition

An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account.

Comments

A brief evaluation and description of the tree with comments on the form, vitality, health and any significant defects that may be present.

Trees are surveyed without reference to any proposed development. The implications of any development are discussed in the Arboricultural Implication Assessment.

Tree Quality Assessment

The tree quality assessment is based on Table 1 of BS 5837:2005 (See below). Four categories (A, B, C and R) are used to denote tree quality (A = High, B = Moderate, C = Low, R = Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the assessment (the subcategories may be used in combination but do not accumulate collective weight).

BS 5837 Root Protection Area (RPA)

The Root Protection Area (RPA) is allocated to ensure that a sufficient area is left undisturbed during development to prevent direct and indirect damage to tree roots and the soil structure.

The RPA is calculated using a mathematical equation included in BS 5837:2005 (Table 2) and is based on a tree's stem diameter. In some cases the RPA may need to be adapted to ensure survival based on criteria such as the tree's condition, species and crown spread. Any alteration should be justifiable but is made at the arboriculturist's discretion.

The surrounding RPA should remain undisturbed and be treated as a sacrosanct Construction Exclusion Zone (CEZ) until development completion and removal is approved by an arboriculturist.

APPENDIX 2: ARBORICULTURE SURVEY METHOD

Recommendations

Recommendations for arboricultural works, etc. are based on the current land use, and take into account the tree or group attributes without bias to the proposed development.

Estimated Remaining Contribution

An estimation of the trees useful life expectancy

Long	> 40 years
Medium	20 – 40 years
Short	10 – 20 years
Very Short	< 10 years

Table 1 — Cascade chart for tree quality assessment

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where for whatever reason the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE: Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria — Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY
NOTE: Whilst C category trees will usually not be retained where they would impose a significant constraint on development young trees with a stem diameter of less than 150 mm should be considered for relocation				

British Standards Institute 2005, p.6

NOTE: All young trees are assessed as category 'C' quality but this does not preclude their retention within a development; all retention and removal recommendations will be detailed within the Arboricultural Implications Assessment report.

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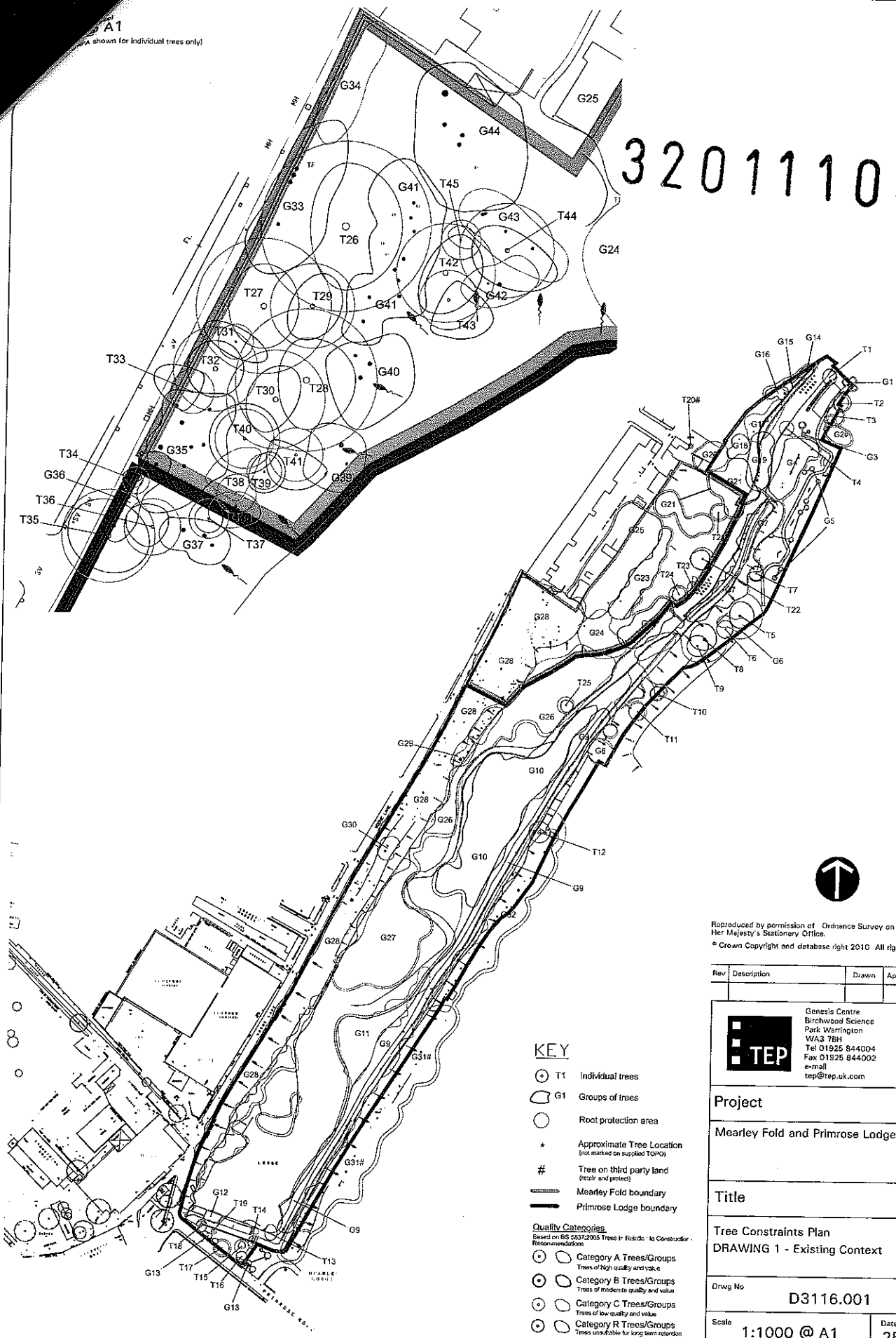
DRAWING 1

TREE CONSTRAINTS PLAN

A1

shown for individual trees only

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KEY

- T1 Individual trees
- G1 Groups of trees
- Root protection area
- * Approximate Tree Location (not marked on supplied TOPO)
- # Tree on third party land (tree and protect)
- Mearley Fold boundary
- Primrose Lodge boundary

Quality Categories

Based on BS 5837:2005 Trees in Relation to Construction - Recommendations

- Category A Trees/Groups
Trees of high quality and value
- Category B Trees/Groups
Trees of moderate quality and value
- Category C Trees/Groups
Trees of low quality and value
- Category R Trees/Groups
Trees unsuitable for long term retention

NOTE: see Arboricultural Data Sheets (Appendix 1) for further information.



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Rev	Description	Drawn	Approved	Date

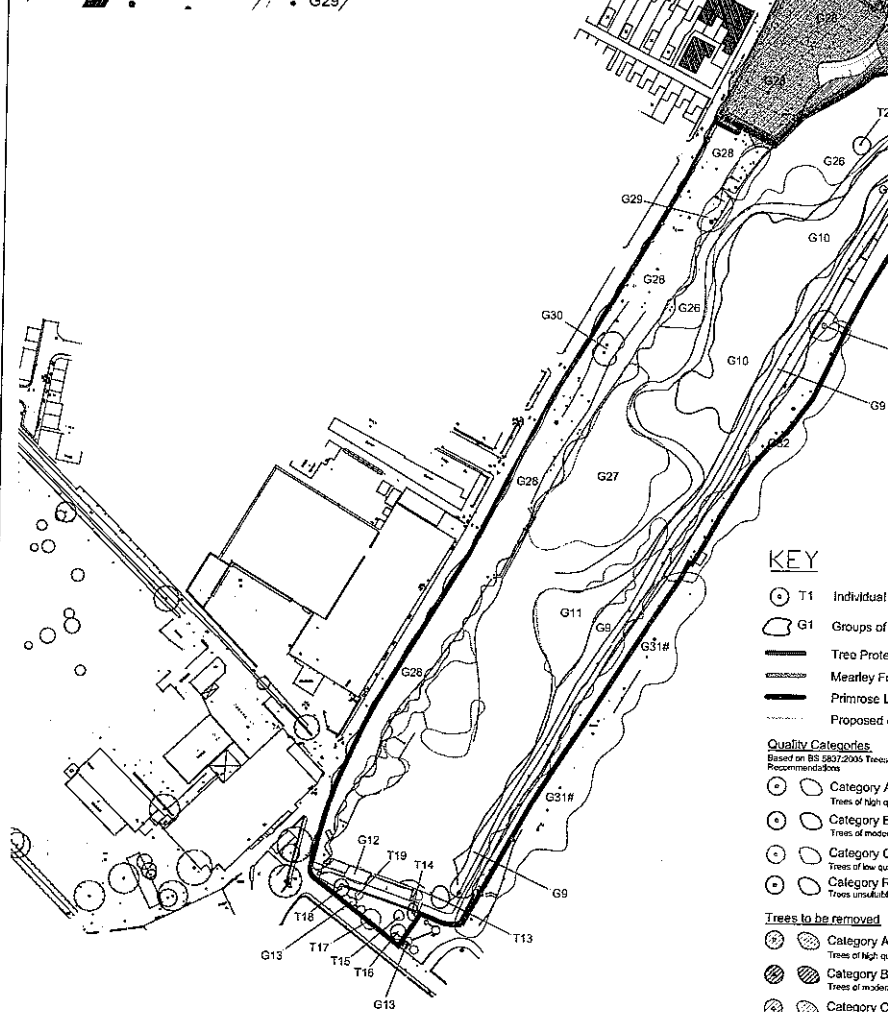
 Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 e-mail tep@tep.uk.com	
Project	
Mearley Fold and Primrose Lodge	
Title	
Tree Constraints Plan DRAWING 1 - Existing Context	
Dwg No	
D3116.001	
Scale	Date
1:1000 @ A1	25/10/11
Drawn	Checked
TP	RO
Approved	Date
NH	

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DRAWING 2

TREE PROTECTION PLAN

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KEY

- T1 Individual trees
- G1 Groups of trees
- Tree Protection Fencing
- Mearley Fold boundary
- Primrose Lodge boundary
- Proposed development

Quality Categories

Based on BS 5837:2005 Trees in Relation to Construction Recommendations

- Category A Trees/Groups
Trees of high quality and value
- Category B Trees/Groups
Trees of moderate quality and value
- Category C Trees/Groups
Trees of low quality and value
- Category R Trees/Groups
Trees unsuitable for long term retention

Trees to be removed

- Category A Trees/Groups
Trees of high quality and value
- Category B Trees/Groups
Trees of moderate quality and value
- Category C Trees/Groups
Trees of low quality and value
- Category R Trees/Groups
Trees unsuitable for long term retention

NOTE: see Arboricultural Data Sheets (Appendix 1) for further information.



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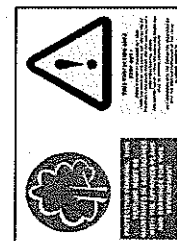
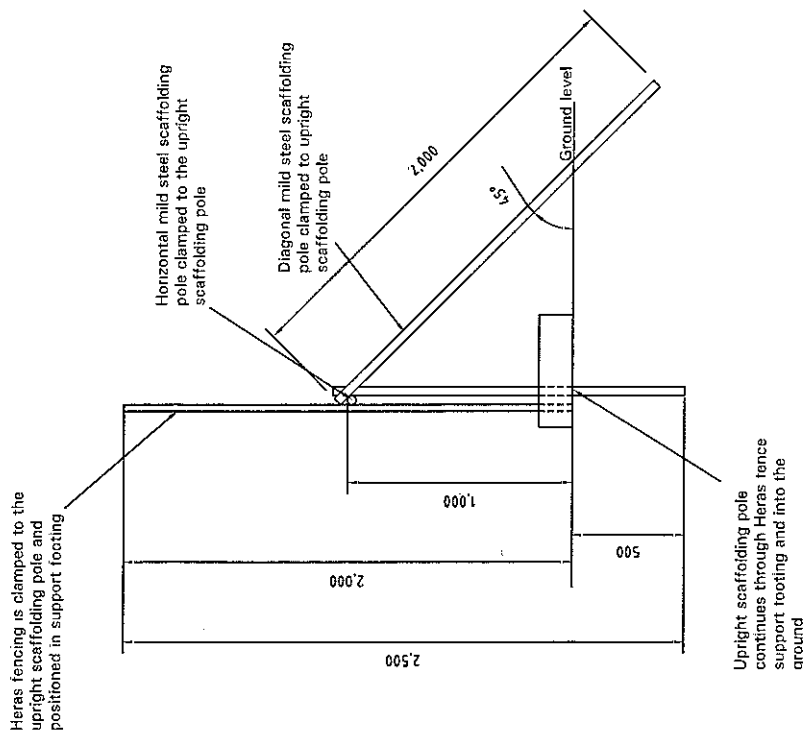
Rev	Description	Drawn	Approved	Date
A	New Layout	TP	JS	12/12
Genesis Centre Birchwood Solence Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 e-mail tep@tep.uk.com TEP				
Project				
Mearley Fold and Primrose Lodge				
Title				
Tree Implications and Protection Plan DRAWING 2 - Development Proposals				
Drawg No D3116.002				
Scale 1:1000 @ A1		Date 08/11/11		
Drawn TP	Checked RO	Approved NH		

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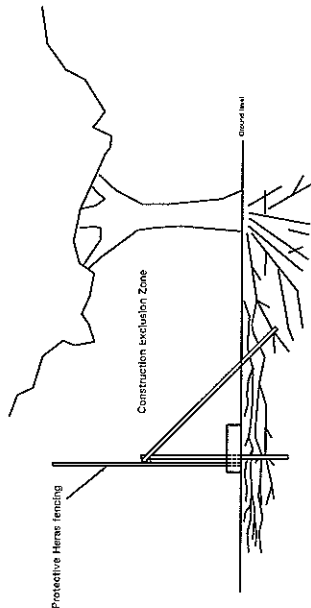
DRAWING 3

RECOMMENDED PROTECTIVE FENCING

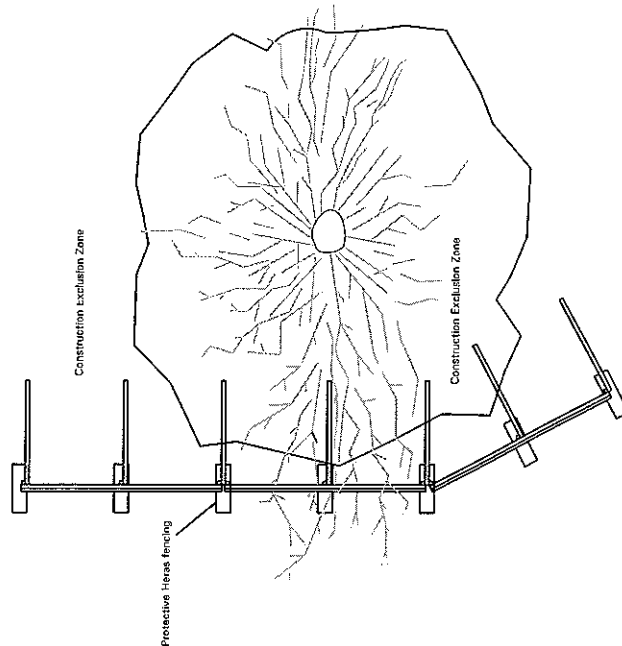
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Tree Protection Notice is to be attached to the fencing 1.5m from the ground, facing out of the Construction Exclusion Zone located at regular intervals along the fence line. The notice must be at least A4 in size



Indicative section of the fence detail in relation to the protection of existing trees



Indicative Plan view of the fence detail in relation to the protection of existing trees



Rev	Description	Drawn	Approved	Date
A	Change to annotation	JS	RR	15/02/10
Genetec Centre 10000 Stirling Park Warrington Warrington, Cheshire WA3 7JN Tel 01925 844004 Fax 01925 844002 e-mail tep@tepuk.com				
Project TEP Standard Detail				
Title Temporary supported Heras Fence Detail for Tree Protection around designated Root Protection Area / Construction Exclusion Zone.				
Drawn No TEP.HERAS.003A				
Scale NTS @ A3				
Date 26/01/10				
Drawn LG				
Checked JS				
Approved PM				