PLANNING APPLICATION FOR 297 RESIDENTIAL DWELLING DEVELOPMENT (USE CLASS C3) COMPRISING A MIX OF MARKET AND AFFORDABLE HOUSING WITH IMPROVED VEHICLE AND PEDESTRIAN ACCESS, PUBLIC OPEN SPACE, LANDSCAPING AND ASSOCIATED UTILITIES AND INFRASTRUCTURE, WITH SITE PREPARATION INVOLVING THE DEMOLITION OF ALL EXISTING STRUCTURES AND SITE CLEARANCE.

ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT

PHASE 9, UPPER HEYFORD

ON BEHALF OF DORCHESTER GROUP

BS5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION – RECOMMENDATIONS'

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REVISIONS:

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10.10.16	-	First issue	MGP
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1. INTRODUCTION

1.1 Pegasus Group have been instructed by Dorchester Group to carry out an arboricultural assessment in relation to a development parcel of land to the south of Camp Road, Upper Heyford named 'Phase 9'; hereafter referred to as 'the site'.

APPENDIX 1 – SITE LOCATION PLAN

1.2 The scope of the assessment was to visit the site and to re-survey relevant trees, groups and hedges in accordance with BS5837:2012 '*Trees in relation to design, demolition and construction – recommendations*.' Pegasus Group was requested to then present the following information:

- Tree survey report
- Schedule of tree survey data
- Tree Survey and Constraints Plan.

1.3 With reference to the above information and BS 5837:2012, Pegasus Group were subsequently also instructed to assess the impact of development proposals on the site's arboricultural resource and to produce the following:

- Arboricultural Impact Assessment
- Tree Retention and Loss Plan
- Tree Protection Plan
- Arboricultural Method Statement.

2. REPORT LIMITATIONS

2.1 Trees are living organisms as well as self-supporting dynamic structures. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. They have the potential to fail structurally, without prior manifestation of any reasonably observable symptoms. It is therefore not possible to categorically state that any tree is 'safe'.

2.2 This report is prepared for the planning application purposes only and does not evaluate the degree of risk posed by trees.

2.3 It is beyond the scope of this report to comment in relation to structural damage – direct or indirect, existing or potential – that might be associated with vegetation growth, or vegetation-related soil subsidence or heave.

2.4 Any management recommendations set out within this report are of an advisory and preliminary nature only and relate to trees within the context of current site use.

2.5 Any physical alterations to site conditions subsequent to the date of the site survey will have the potential to change/invalidate the findings and recommendations of this report.

2.6 The findings and recommendations of this report are limited to a period of 24 months from the date of this report.

2.7 Findings relate to the site conditions as found at the time of survey.

3. OTHER CONSIDERATIONS

Statutory tree protection

3.1 Cherwell District Council have confirmed that the site is located within the Upper Heyford Conservation Area but that none of the trees on or adjacent to the site are currently protected by Tree Preservation Order (TPO).

3.2 It must therefore be noted that the trees >75mm DBH that are located within the Conservation Area are subject to statutory protection.

3.3 Notwithstanding specific exemptions and in general terms, a Conservation Area prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees or woodlands without the prior consent of the local planning authority.

3.4 Penalties for contravention of a Conservation Area tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £25,000 if convicted in a Magistrates' Court, or an unlimited fine is the matter is determined by the Crown Court.

3.5 On many sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter without having first obtained a felling licence from the Forestry Commission.

3.6 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with the statutory controls outlined.

Statutory Wildlife Protection

3.7 Although preliminary visual checks from ground level of likely wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside the remit of this report.

3.8 Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for bats in addition to birds and small mammals. It is recommended that in line with any accompanying specialist advice, any tree works should only be carried out following a detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the project

manager, site owner or consulting arboriculturist should be informed and appropriate action taken as recommended by a Statutory Nature Conservation organisation such as Natural England.

3.9 It is advised that tree/hedgerow works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. Ideally, operations should be avoided during this period. Any necessary work should only be carried out following a preliminary check of the vegetation.

3.10 For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in Britain.

4. DESCRIPTION OF SITE AND TREES

4.1 The site is located at the south-western edge of the Former RAF Upper Heyford, Oxfordshire.

- OX25 5AB
- SP 50363 25812

4.2 The site consists of an area of numerous semi-derelict buildings with associated roadways and areas of hardstanding. Access to the site is off Camp Road to the north. Within the site is an area of grassland with the remains of tennis courts and sports/recreational pitches.

4.3 To the south of the site is an arable field and to the west Kirtlington Road that separates the site from a further arable field. To the east of the site are further areas associated with the Upper Heyford base which is identified for residential development. To the north of the site is Camp Road and additional airbase infrastructure that is part of the wider Upper Heyford site.

4.4 Vegetation on site is largely confined to the northern, eastern and western boundary of the site and central to north western portion of the internal of the site. Vegetation is a mixture of mature and early mature species. The internal of the site contains predominantly lower quality surveyed items with moderate quality items general located on the northern and western boundary. Species on site are largely comprised of birch and maple with other species such as Leyland cypress, whitebeam, cherry and hawthorn.

5. SURVEY METHODOLOGY

Tree Survey

5.1 The tree survey was carried out (20.03.15 and 15.06.16) with reference to methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Trees were not tagged.

5.2 Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (eg avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals

5.3 Tree survey findings are recorded in the tree survey schedule.

APPENDIX 2 – TREE SURVEY SCHEDULE

5.4 Within the tree survey schedule, each surveyed Tree (T) or Group (G) on or adjacent to the site is given a reference number which refers to its position on the overall tree survey plan for Upper Heyford (electronic copy available on request). Tree survey plan information such as quality grading, preliminary tree constraints: root protection areas is subsequently used in order to assess arboricultural impacts and tree protection measures.

5.5 In accordance with BS5837:2012, the following measurement standards were applied.

- *Tree species* are listed by common name.
- *Heights* are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- *Trunk diameters* are measured in millimetres and are rounded to the nearest 10mm. Single stemmed tree diameters are measured at 1.5m above ground level or, where a fork or swelling makes this impractical, at the narrowest point beneath. Diameters of multi-stemmed trees are calculated as 'combined stem diameters' according to specific guidance set out within BS5837:2012. Where trunk diameters have had to be estimated due to poor access, for example, this is indicated with a '#'.
- *Branch spreads* are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over *10m.*
- *Crown clearance* is expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in

terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.

- *Estimates.* Where any other measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.
- *Life stage* is defined as Y – young (stake dependent), SM - Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature), EM – Early Mature (not yet having reached 75% of expected mature size), M – Mature (anything else up to normal life expectancy for the species), OM – Over Mature (anything beyond mature and in natural decline), V – Veteran (any tree displaying characteristics described by Natural England).
- *General observations* are recorded in relation to a tree's structural and/or physiological condition (eg the presence of any decay and physical defect) and /or any preliminary management recommendations that may be appropriate.
- *Physiological condition* is described as Good (no indications of impaired physiological function and in optimum condition for age and species), Fair (with indicators of reduced vitality. Some intervention may be required), Poor (with significantly impaired physiological function for age and species).
- *Structural condition* is described as Good (without any observable significant bio-mechanical structural weaknesses), Fair (with minor biomechanical structural flaws. Some remedial action may be required), Poor (with significant biomechanical weaknesses requiring intervention particularly where risk management is required).
- *Useful life expectancy,* or the length of time a tree's is estimated to be able to make a useful contribution, is expressed in years as: <10, 10+, 20+, 40+.
- *Quality of individual trees, groups of trees and woodlands is assessed in terms of quality* and benefit within the context of proposed development and graded into one of four categories (A, B, C and U) which are differentiated on the tree survey (Appendix 3) plan by the colours indicated below:
    - **Category A (Green)** Trees of high quality with an estimated remaining life expectancy of 40 years
    - **Category B (Blue)** Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
    - **Category C (Grey)** Trees of low quality with an estimated remaining life expectancy of at least 10 years.
    - **Category U (Red)** Unsuitable for retention. Trees in such a poor condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- A, B and C trees have also been given a sub-category of 1, 2 or 3 which reflects their arboricultural, landscape or cultural and conservation values respectively. Each subcategory has an equal weight, for example an A1 tree has the same retention priority as an A3 tree.
- In addition to the category, the tree survey schedule also describes each tree's root protection area (RPA) in terms of radius (metres) and overall area (sq metres).

6. TREE SURVEY FINDINGS

6.1 A summary of the tree survey findings for the whole site is shown in table form below and can be seen graphically on the Tree Survey and Constraints Plan.

	A	B	C	U	Total
Groups	0	3	19	0	22
Trees	0	19	49	0	68
Hedgerows	0	1	0	0	1
Shrub Mass	0	0	1	0	1
Total	**0**	**23**	**69**	**0**	**92**

6.2 With reference to the above table it can be seen that out of a total of 92 survey items:

- A large proportion of survey items were assessed as *low quality* with a life expectancy of 10+ years
- Approximately 25% of survey items were assessed as *moderate quality* with a life expectancy of 20+ years
- No surveyed items were assessed as *unsuitable* for retention in the current site context, having life expectancies of <10 years.
- No surveyed items were assessed as *being high quality* having life expectancies of 40+ years.

6.3 In summary, and with regard to the context of the site, the principal arboricultural considerations are:

- Large proportion of low quality trees that were assessed as only being likely to meaningfully contribute in the comparative short-term.
- Smaller proportion of moderate quality trees capable of making a contribution to the site for a substantial timeframe.

7. IDENTIFICATION OF PRELIMINARY TREE CONSTRAINTS

7.1 In accordance with BS5837:2012, below ground constraints, or root protection areas (RPAs), for the surveyed trees have been plotted onto the tree survey plan for the site. These are represented as a circle centred on the base of each tree stem with a radius of 12 times stem diameter measured at 1.5m above ground level.

7.2 With reference to BS5837:2012, a root protection area (RPA) is defined as

> **"a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority". "The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained".**

7.3 BS5837:2012 states (4.6.2) that,

> **"where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced."**

The BS goes on to state that,

> **"modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,"**

and that any deviation from the original circular plot should take into account:

- morphology and disposition of roots
- topography and drainage
- soil type and structure
- the likely tolerance of the tree to root damage/disturbance

7.4 Root systems can be damaged in a number of ways as follows:

- Severance of a root will destroy all parts of the root beyond that point. The larger the root severed, the greater the impact on the tree. If roots are damaged close to the trunk, the anchorage and stability of the tree can be affected.
- The root bark protects the root from decay and is also essential for further root growth. If damage to the bark extends around the whole circumference, the root beyond that point will be killed.
- Soil compaction, which may occur from storage of material or passage of heavy equipment over the root area, can restrict and even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.
- Lowering the soil level will strip out the mass of roots near the surface.

- Raising soil levels will have the same effect as soil compaction.
- Incorrect selection and application of herbicide.
- Spillage of oils or other harmful materials.

7.5 Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments; usually post occupancy. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and protected trees.

8. PROPOSED DEVELOPMENT – DESCRIPTION AND BACKGROUND

8.1 The development proposals are for:

"A 297 residential dwelling development (Use Class C3) comprising a mix of market and affordable housing with improved vehicle and pedestrian access, public open space, landscaping and associated utilities and infrastructure, with site preparation involving the demolition of all existing structures and site clearance."

8.2 The layout of the development has emerged from an ongoing consideration of arboricultural constraints. Pro-active collaboration between Cherwell District Council's and Pegasus' Arboriculturists from an early stage in the process has sought to achieve, insofar as reasonably practicable, a harmonious spatial relationship between buildings and trees.

8.3 As part of this work, a design team site walk took place to agree acceptable levels of tree retention and removal. This culminated in the production of a draft arboricultural constraints plan to provide parameters for site layout design.

APPENDIX 3 – DRAFT ARBORICULTURAL CONSTRAINTS PLAN

9. ARBORICULTURAL IMPACT ASSESSMENT (AIA)

9.1 With reference to BS5837:2012 *'Trees in relation to design, demolition and construction'*, this AIA evaluates the direct and indirect effects of the proposals on the site's arboricultural resource.

9.2 The AIA considers the effects of any tree loss required to implement the proposals as well as any potentially damaging activities proposed in the vicinity of retained trees.

9.3 With reference to BS5837:2012, the AIA includes a tree retention and removal plan. This illustrates the anticipated extent of tree removals that will be required in order to enable the construction of the development proposals.

APPENDIX 4 – TREE RETENTION AND REMOVAL PLAN

9.4 An AIA schedule is attached that relates to the trees affected by the proposals.

APPENDIX 5 – ARBORICULTURAL IMPACT ASSESSMENT SCHEDULE

9.5 The AIA schedule is an interpretation by an arboriculturist of the proposals in relation to the existing arboricultural constraints on site. The schedule provides a tree-by-tree/group-by-group assessment of the level of potential impacts of the proposals. This assessment is cross referenced against tree/group qualities in order to provide consistent evaluations of the degree of significance of the anticipated arboricultural impacts.

9.6 The AIA schedule subsequently sets out any preventative measures and other mitigation proposals to reduce, insofar as possible, the level of arboricultural impact and its corresponding significance. This 'adjusted' significance – which is an approximation - may be considered either in terms of an individual survey item, for example in the context of the use of tree protection barriers, or (where mitigation planting is concerned) in the wider context of the site's overall arboricultural resource.

9.7 Analysis of the AIA schedule relating to the development area is set out in table form below:

	A	B	C	U	Total
Remove	0	6	49	0	55
Retain	0	17	20	0	37
Total	**0**	**23**	**69**	**0**	**92**

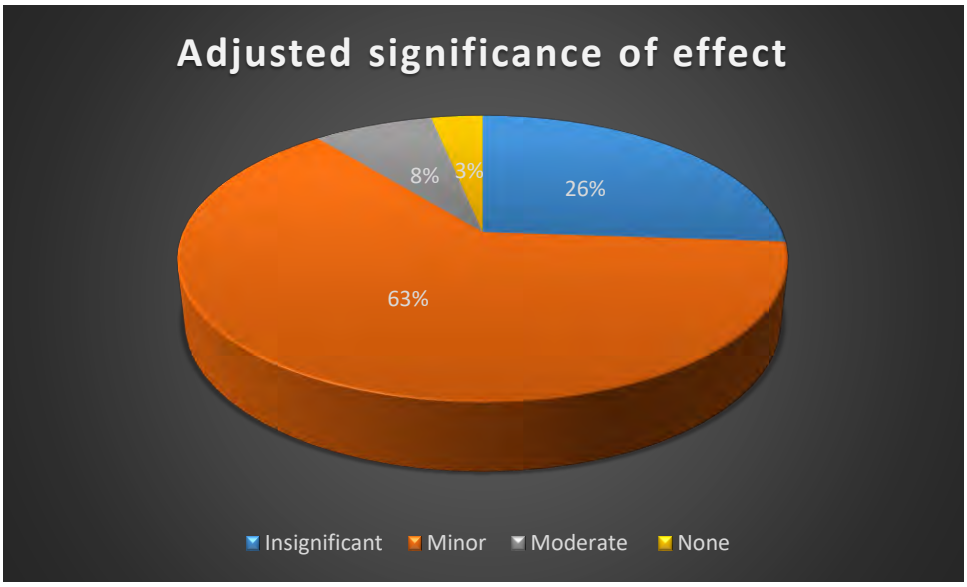
9.8 With reference to 9.7 it can be seen that out of an overall total of 92 survey items:

- Approximately 60% of the arboricultural resource (55 survey items) must be removed:
  - Category B: six survey items
  - Category C: forty-nine survey items.
- Approximately 40% of the overall arboricultural resource shall be retained:
  - Category B: seventeen items
  - Category C: twenty items consisting of six groups and 44 trees.

9.9 It can be seen that the greater majority of moderate quality (Category B) survey items will be retained as part of proposals.

9.10 With reference to the AIA schedule, the overall estimated adjusted significance (ie in the context of new landscape tree planting) of the proposals is summarised in table and graphical form below:

Adjusted significance of effect	**Total**
Insignificant	24
Minor	58
Moderate	7
None	3
Total	**92**



9.11 With reference to the above table and definitions of significance of effect which are set out alongside the AIA Schedule, it can be seen that the greater majority of arboricultural impacts of the proposed development are considered to be:

- 8% 'moderate': In the case of damage: unlikely to give rise to tree death but likely to noticeably reduce vitality and deterioration of appearance in the short and medium term, with corresponding reduction in public visual amenity value where relevant. Tree removals that can be effectively mitigated in the medium term (20-40 years).
- 63% 'minor': Short-term damage with limited distribution that can be reasonably compensated for by new growth. Unlikely to result in observable symptoms of damage in relation to structural integrity/vitality/appearance. No obvious impact on public visual amenity. Tree removals that can be mitigated in the short-term (10-20 years).
- 26% 'Insignificant' (Minimal damage in very small amounts. No obvious impact on public visual amenity.
- 3% 'None' (no above or below ground impacts).

9.12 In addition to the above, comparison of initial agreed and finalised tree retentions demonstrates that the design process has largely successfully given due consideration to initially arboricultural constraints.

9.13 Overall, it is therefore reasonable to conclude that the proposals are acceptable from an arboricultural perspective for the following key reasons:

- The greater majority of existing better quality trees on the site shall be retained
- New trees can also be incorporated into a new design in a way that will additionally compliment all aspects of the new development in the long-term.

10. TREE PROTECTION PLANs (TPP)

10.1 Tree Protection Plans for demolition and construction phases of the proposals are attached.

APPENDIX 6 – TREE PROTECTION PLAN: DEMOLITION

APPENDIX 7 – TREE PROTECTION PLAN: CONSTRUCTION

10.2 In accordance with BS5837:2012 the TPP is superimposed onto the proposed site layout plan and based on the topographical survey. Any hard surfacing and structures within the RPAs of trees to be retained are shown on the TPP. In addition, where relevant, the TPP shows the following information, accompanied by descriptive text as required:

- Precise locations of protective barriers (forming Construction Exclusion Zones in relation to RPAs of retained trees)
- Other protection measures necessary e.g. site perimeter fencing

10.3 The preparation of the TPP has considered the following factors where relevant:

- Site construction access
- Intensity and nature of construction activity
- Contractors car parking
- Phasing of construction works
- Availability of special construction techniques; and
- Spatial requirements

10.4 The tree protection measures shown demonstrate the feasibility of the proposed development in relation to retained trees.

11. ARBORICULTURAL METHOD STATEMENT (AMS)

Purpose

11.1 The aim of this AMS is to prevent and/or minimise the impacts of demolition and construction works on trees that are to be retained as part of the development. It gives step-by-step guidance and specifications for works which have the potential to result in loss of, or damage to, retained trees.

Abbreviations Used

11.2 The following abbreviations and definitions apply in relation to this document:

AIA – Arboricultural Impact Assessment

AMS – Arboricultural Method Statement

RPA – Root Protection Area

CEZ – Construction Exclusion Zone

TPP – Tree Protection Plan

Informative - how tree damage can occur

11.3 Above the ground.

Damage can occur as a result of contacts between branches and/or tree trunks. This is often but not always associated with machine operations, groundwork's excavations, teleporters, high sided vehicles and crane use. Other forms of above ground damage include fixings to trunk and unauthorised cutting back of branches.

11.4 Below the ground

It is often not appreciated that the majority of most tree roots are generally located within the top 600mm of the ground. On this basis it needs to be understood that damage to roots can occur in two ways:

- Root severance can occur as a result of, for example, soil stripping during site clearance or excavations for services.
- Root dieback and death can result from compaction of the soil. Compaction can occur surprisingly easily as a result of vehicle weight, weight of stored materials or increased pedestrian access. Compaction crushes out soil pore

space and prevents tree respiration from occurring (respiration requires gas exchange between the ground and the atmosphere). Compacted soil is denser and therefore inhibits/prevents any further new root growth.

11.5 The effects of these impacts can be disfiguring to a tree's appearance and also weaken a tree making it more liable to attack by pest and diseases. In addition, root damage or death results in corresponding decline above the ground with dieback occurring within the tree crown.

11.6 The effects of damage to trees generally take some time to become fully apparent. In many cases, damaged trees decline slowly after the completion of a new development, until they eventually need to be removed due to ill health.

11.7 Tree protection barriers and load distributing 'no-dig' paths are specified in order to prevent soil compaction from taking place.

Key personnel and individual responsibilities

11.8 The Client (Dorchester Group) shall hold overall responsibility for the project and shall appoint professionals and delegate responsibility in relation to the Scheme of Tree Protection as follows:

- Project Site Manager shall hold responsibility to ensure that all key contractors and all other persons working on site have a responsibility to be aware of trees and to abide by tree protection procedures set out within the Scheme of Tree Protection and the Arboricultural Method Statement.

- Project Arboriculturist shall be responsible for independently monitoring/supervising the effectiveness of tree protection at regular intervals and report all findings in writing back to the developer, the project site manager and the local planning authority.

Contacts

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- Mike Paginton – Project Arboriculturist (Pegasus Group) 01285 641717 mike.paginton@pegasuspg.co.uk

- Rhodri Jones – Cherwell District Council Arboricultural Officer – 01295 221708 rhodri.jones@cherwellandsouthnorthants.gov.uk

11.9 Any change to the appointed individuals and their contact information shall be recorded as part of the on-site pre-commencement site meeting.

How the AMS must be used

11.10 The AMS must be used as a reference source for site operatives in order to guide tree-related aspects of the construction process.

11.11 The AMS must be referred to by site managers during the demolition and construction process itself. A copy of this document must therefore be kept available in the main Site Office for quick and easy reference.

Site induction

11.12 Prior to commencing works on site, all site operatives must be briefed by the Site Manager in relation to site procedures and rules that relate to retained trees as well as the content of the AMS. Site operatives shall sign to confirm that they understand and will abide by these requirements. The Site Manager shall retain copies of these site induction statements for future reference as may be necessary.

APPENDIX 8 – SITE INDUCTION FORM - TREE AWARENESS

11.13 The site operations must be sequenced in accordance with the over-arching timetable of work stages set out within the AMS. Should any change to the sequence of operations be necessary, or if any other incidents occur, the Project Arboriculturist must be consulted. The Project Arboriculturist shall then evaluate any potential arboricultural impacts that could arise and specify additional tree protection/remediation measures as required. Confirmation that the proposed changes are acceptable within the context of relevant planning permission must be obtained in writing from the local planning authority prior to any new operations on site.

11.14 Where site operations have potential to result in more substantial impacts on retained and protected trees, an arboricultural watching brief shall be required.

General site rules for tree protection

11.15 Do not independently carry out any activity that is at odds with the site Scheme of Tree Protection.

11.16 In simple terms: **do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison with the Project Arboriculturist and written authorisation from the Local Planning Authority.**

11.17 Within the CEZ:

- No mixing of cement
- No soil/turf stripping, raising/lowering of ground levels, deposit or excavation of soil or rubble
- No excavations for services or installation of services
- No storage of materials, machinery fuel, chemicals or other materials of any other description
- No parking/use of tracked or wheeled machinery
- No siting of temporary structures including hard standing areas, portaloos, site huts
- No lighting of fires or disposal of liquids.

11.18 Fires on site should be avoided if possible. Where they are unavoidable, they must not be lit in a position where heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree or the centre line of any hedgerow to be retained. No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained tree.

Work Phases

11.19 The table below lists and describes the sequence of works that must be followed in order to minimise damage to retained trees.

11.20 In the event that changes are required to the order of work phases, advise should be sought from the project arboriculturist.

Phase	Work stage	Job description
Demolition	1	Pre-commencement site meeting
	2	Approved tree removal works by suitably competent and qualified person
	4	Erection of tree protection barriers to BS.5837: 2012 as shown on the TPP Demolition
	5	Affix CEZ warning notices to tree protection barriers
	6	Main Demolition phase
	7	Removal of concrete footpath along northern boundary – installation of ground protection and tree protection barriers in secondary positions.
Construction	8	Pre-commencement site meeting
	9	Install temporary tree protection fencing to primary location as shown on the TPP Construction
	10	Affix CEZ warning notices to tree protection barriers
	11	Main construction phase
	12	Re-align protection fencing to secondary positions and install ground protection prior to footpath installations
	13	Installation of no dig footpaths
	14	Removal tree protection barriers
	15	Final Landscaping

Demolition Phase

Pre-Commencement Site Meeting - Demolition

11.21 The purpose of the meeting is to enable all relevant parties within the development team to meet, to be aware of the requirements of the AMS in relation to demolition, and to agree a co-ordinated approach to the project.

11.22 Required attendees:

- Site project manager
- Contractors (including arborist) and other relevant parties

11.23 Matters to be addressed:

- Identification of persons present and exchange of contact information
- Familiarisation with all aspects of the AMS
- Familiarisation with the site in relation to the AMS

Tree Removals

11.24 Trees/groups/hedgerow sections to be removed are shown in red on Tree Retention and Removal Plan (see Appendix 4).

11.25 All removals must be carried out in accordance with BS.3998:2010 Recommendations for Tree Works, where appropriate, and be carried out by suitably qualified and competent persons. Removals must be undertaken with care not cause above or below ground damage to retained trees.

11.26 All arising's shall be disposed of, off site, as instructed by the site manager.

11.27 All removal works must be undertaken outside of bird nesting season.

Installation of Tree Protection Barriers and Notices

11.28 All tree protection barriers must be installed in accordance with the BS5837:2012 specification that is shown on the TPP Demolition.

APPENDIX 6 TREE PROTECTION PLAN DEMOLITION

11.29 Tree protection barriers must be erected prior to the commencement of any site demolition operations. They must remain in place for the duration of all demolition works.

11.30 All weather A2-sized notices reading, "CONSTRUCTION EXCLUSION ZONE – NO ACCESS" shall be attached to tree protection barriers.

APPENDIX 9 CONSTRUCTION EXCLUSION NOTICE

11.31 The project arboriculturist must approve the condition and positioning of fencing and report to LPA Tree Officer prior to commencement of further stages in the demolition process.

Main Demolition Phase

11.32 All tree protection barriers to remain in place until all demolition works are completed. If it becomes apparent that any adjustment to the tree protection barriers is required to facilitate any demolition works, advise should be sought from the project arboriculturist on how to proceed. The Local Authority Tree Officer will be given at least 5 days' notice of any required deviation from the tree protection plan.

Removal of Concrete Footpath along Northern Boundary

11.33 A concrete footpath runs on an east to west alignment along the northern boundary of the site. Sections of the footpath are lined with mature trees that are to be retained. In addition, these sections of footpath are located within the default circular RPA of these trees, namely T63, T64, T67, T68, T69, T70, T75, T76, T79, T80, T81, G82 and G83.

11.34 Removal of this concrete footpath will require works to be carried out within the CEZ. This will require access points through the primary position of tree protection fencing. Suggested access points are shown on the TPP Demolition.

11.35 Prior to footpath removal within the CEZ, tree protection fencing will be installed in secondary positions as shown on the TPP Demolition. In addition, temporary ground protection, such as ground guards, will be installed in locations as shown on the TPP Demolition.

11.36 Once tree protection fencing is installed in secondary positions and ground guards are in place, works can begin to remove the existing concrete footpath.

11.37 The footpath is comprised of concrete slabs. Where possible these will be lifted out in sections using a light weight mechanical excavator. Works will adopt a lift out pull back approach where the mechanical excavator works backwards along the concrete path away from exposed areas following slab removal.

11.38 Following the removal of the concrete slabs, fresh topsoil is to be spread over the exposed ground to bring the ground level in line with the surrounding level.

11.39 In areas where retained tree canopies prevent the use of a mechanical excavator, works are to be carried out using hand tools only.

11.40 On completion of footpath removal, fencing can be removed from the secondary position along with the ground guards. These are to be removed by hand. Fencing is then to be reinstated in the primary position as shown on the TPP Demolition.

Construction Phase

Pre-Commencement Site Meeting - Construction

11.41 The purpose of the meeting is to enable all relevant parties within the development team to meet, to be aware of the requirements of the AMS in relation to construction, and to agree a co-ordinated approach to the project.

11.42 Required attendees:

- Site project manager
- Contractors (including arborist) and other relevant parties

11.43 Matters to be addressed:

- Identification of persons present and exchange of contact information
- Familiarisation with all aspects of the AMS
- Familiarisation with the site in relation to the AMS

Tree works

11.44 Minor facilitation pruning to the lower canopies of T1154 – T1157, and T1162-T1166 may be required to ensure footpath, protection fencing and driveway clearance. Any pruning works are to be carried out by a suitably qualified and competent contractor in accordance with BS.3998:2010.

11.45 If it becomes apparent that major tree works are required, advise should be sought from the project arboriculturist and Local Authority Tree Officer notified.

11.46 No tree works are to be carried out without consent form the LPA.

Installation Tree Protection Barriers and Notices

11.47 Prior to any construction related activities, temporary tree protection fencing must be re-aligned from their position during demolition and installed in the primary location as shown on the Tree Protection Plan Construction.

APPENDIX 7 TREE PROTECTION PLAN CONSTRUCTION

11.48 All fencing must remain in place for the duration of the construction phase.

11.49 All weather A2-sized notices reading, "CONSTRUCTION EXCLUSION ZONE – NO ACCESS" shall be attached to tree protection barriers.

APPENDIX 9 CONSTRUCTION EXCLUSION NOTICE

11.50 The project arboriculturist must approve the condition and positioning of fencing and report to LPA Tree Officer prior to commencement of further stages in the construction process.

11.51 On completion of all construction works, the project arboriculturist shall assess site conditions prior to removal of barriers and to give LPA Tree Officer one week's written notice of intention to remove barriers.

Main construction phases

11.52 Tree protection fencing is to remain in its primary position for the duration of construction. If any unforeseen circumstance arises that requires fencing to be adjusted, prior advice should be sought from the project arboriculturist and notice given to the local authority tree officer.

Adjustment to the Tree Protection Fencing

11.53 Following the main construction phase, tree protection fencing is to be re-positioned and adjusted to enable 'no dig' footpath installation within the RPA of retained trees. This will require fencing to be moved from the primary position to secondary positions in relation to T1154, 1155, T1161-T1166, T61, G362, and G363.

11.54 With regard to T63, T64, T67-T70, T75, T76, T79, T80, T81, G82, and G83, the location of primary fencing is to remain in place and additional fencing installed in secondary locations as shown on the TPP Construction. Access points will need to be made within the primary fencing to allow footpath construction. Suggested locations for points of access within primary fencing are shown on the TPP Construction. Areas within the RPAs of retained trees between primary fencing/secondary fencing and the location of the proposed new footpath are to be protected with temporary ground protection, such as ground guards. These areas are shown on the TPP Construction.

Installation of load distributing 'No Dig' footpaths

11.55 Footpaths are proposed within the default circular RPAs of T61, T63, T64, T67, T68, T69, T70, T75, T76, T79, T80, T81, G82, G83, G362, T1154, T1155 and T1164-T1166.

11.56 Sections of the footpaths that run through tree RPAs are to be installed using a no dig methodology, using a load distributing cellular confinement system, in the locations indicated on the Tree Protection Plan Construction.

11.57 Under no circumstances should any excavations occur within the RPAs of these trees without the prior written consent of the LPA.

11.58 Installation of the footpaths must be in accordance with the manufacturer's method statement.

APPENDIX 10 – CELLWEB INSTALLATION METHOD STATEMENT

11.59 The sequence of operations for installation of the no dig footpaths is set out below.

Phase	Work stage	Job description	Notes
Construction	13a	Ensure tree protection fencing is erected in secondary positions. Install temporary ground guards where required.	All works to be carried out by hand.
	13b	Remove any protruding stones/rubble	All works to be carried out by hand.
	13c	Level ground	Fill major hollows with clean sharp sand. Do not grade off high points. Work by hand.
	13d	Install geotextile membrane	Work in accordance with manufacturer's instructions
	13e	Set out cell web and pin into place	Work in accordance with manufacturer's instructions
	13f	Fill cell web with angular, washed 40/20 road stone containing **no fines.**	Work into the site from outside the RPA so that no activity occurs anywhere except on previously filled cell web. Work in accordance with manufacturer's instructions
	13g	Add permanent wearing course	None

Removal of tree protection barriers

11.60 All construction operations must be completed prior to the commencement of this phase of tree protection.

11.61 The Project Arboriculturist shall be briefed so as to be able to provide the LPA with 5 working days' notice of commencement of tree protection barrier removal.

11.62 All works associated with protection barrier removal must take place from outside of CEZs. Barriers must be removed by hand. Any mechanical plant used must not enter into CEZs.

Final landscaping

11.63 A small amount of soft landscaping work is required within the RPA's of retained trees. This mainly relates to the planting of grass and shrubs.

11.64 Cultivation for new grass areas and shrubs within RPAs will be carried out using hand tools only.

11.65 Landscape work within RPA's of retained trees will only proceed once the main construction phase has been completed and the site conditions are appropriate to allow the tree protection measures to be removed. Before protection fencing is to be removed prior confirmation of appropriate site conditions will be determined by the project arboriculturist and notification/approval given to the LPA.

Arboricultural Monitoring

11.66 A summary of arboricultural site monitoring requirements is set out below

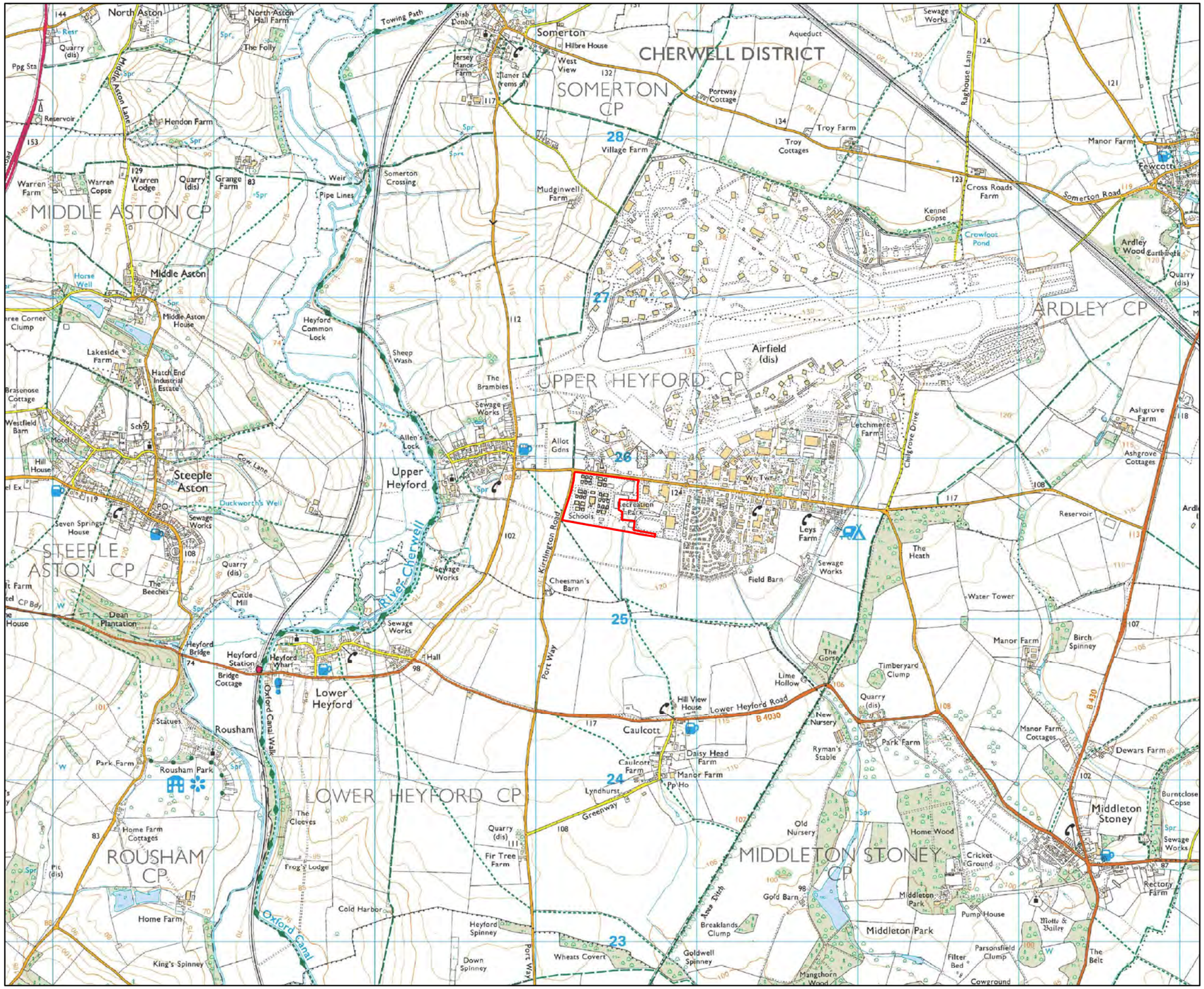
phase	Work stage	Job description	Project Arboriculturist Actions
Demolition	1	Pre-commencement site meeting	Report to LPA that meeting has occurred and that specified matters have been addressed.
	2	Approved tree clearance works by suitably competent and qualified person	Oversee removal works and provide advice where necessary.
	4	Erection of tree protection barriers to BS.5837: 2012 as shown on the TPP Demolition	Report to LPA that tree protection is in place according to Tree Protection Plan Demolition
	5	Affix CEZ warning notices to tree protection barriers	
	6	Main Demolition phase	Project arboriculturist monitors ongoing condition of tree protection at monthly intervals. Reports findings and recommendations to LPA.
	7	Re-align tree protection fencing and removal of concrete footpath	Oversee removal works within RPAs. Provide advice as necessary. Report to LPA that concrete footpath has been removed.
Construction	8	Pre-commencement site meeting	Report to LPA that meeting has occurred and that specified matters have been addressed.
	9	Install temporary tree protection fencing to primary location as shown on tree protection Plan Construction	Report to LPA that tree protection is in place according to Tree Protection Plan Construction
	10	Affix CEZ warning notices to tree protection barriers	
	11	Main construction phase	Project arboriculturist monitors ongoing condition of tree protection at monthly intervals.

			Reports findings and recommendations to LPA.
	12	Re-align protection fencing to secondary positions and install ground protection prior to footpath installations	Project arboriculturist to inspect tree protection is in place according to Tree Protection Plan Construction and supervise footpath construction works within the RPAs of retained trees.
	13	Installation of no dig footpaths	
	14	Removal tree protection barriers	Project Arboriculturist assesses site conditions prior to decision to remove barriers. Gives required notice to LPA. Reports to LPA to confirm correct removal.
	15	Final Landscaping	None

APPENDIX 11 – TREE PROTECTION SITE MONITORING FORM

APPENDIX 1

SITE LOCATION PLAN



KEY

Application Site Boundary

0 1 km

Information based on all known constraints.

1.1	FIGURE
Application Site Boundary	TITLE
1:25,000 @ A3	SCALE
D.0358_18-A	DWG. NO.

APPENDIX 2

TREE SURVEY SCHEDULE

Date; 2012, 20.03.15, 15.06.16	Site: Upper Heyford													Surveyor: MR/MGP					Client:	Dorchester Group			Job no:		D.0358	
						Spread								Crown clearance height												
Number	Species	Height	Estimate	Stem dia	Estimate	N	Estimate	S	Estimate	E	Estimate	W	Estimate	1st branch	Estimate	1st branch direction	Canopy	timate	Life stage	General observations	Structural condition	Physiological condition	ULE	Quality grading	RPA radius	RPA area
T61	Maple	11	-	460	-	5	-	3	-	6	-	4	-	2	-	East	2	-	M	Exposed girdling roots. Weak fork at 2.5m. Fire hydrant at base to east.	Medium	Low	10+	C1	5.5	95.7
T62	Whitebeam	6	-	410	-	4	-	3	-	4	-	4	-	2	-	West	2	-	M	Minor bark damage at base.	High	High	10+	C1	4.9	76.1
T63	Sycamore	12	-	600	-	7	-	6.5	-	6	-	6	-	3	-	North east	3	-	M	Small wet cavity at 2m west. Pruning wounds well occluded.	High	High	20+	B1	7.2	162.9
T64	Ash (Common)	14	-	620	-	6	-	7	-	6.5	-	7.5	-	4	-	West	4	-	M	Several pruning wounds and branch damage associated with lighting columns. Cavity at 2.5m north west. Exposed roots.	Medium	Medium	20+	C1	7.4	173.9
T65	Whitebeam	10	-	620	-	5	-	5	-	5	-	5	-	2	-	South	1.5	-	M	Notable in terms size for species.	High	High	20+	B1	7.4	173.9
T66	Whitebeam	8	-	570	-	5	-	5	-	5	-	5	-	2	-	South	1.5	-	M	Notable in terms size for species.	High	High	20+	B1	6.8	147.0
T67	Ash (Common)	11	-	570	-	6	-	5	-	7.5	-	4.5	-	2.5	-	East	2	-	M	Exposed roots. Pruning wound and cavity at 1m west. Moderate amounts minor deadwood. Longitudinal crack at 2m north east.	Medium	Medium	10+	C1	6.8	147.0
T68	Ash (Common)	14	-	650	-	6	-	6	-	7	-	7	-	2.5	-	West	2	-	M	Minor amounts minor deadwood.	Medium	Medium	20+	B1	7.8	191.2
T69	Chestnut (Horse)	14	-	780	-	6	-	6	-	6	-	4	-	2	-	All round	3	-	M	Indication of bacterial wet wood. Weak forks observed with included bark. Elder growing within fork at 1.8m, indication of decay. Decay at union west side with crack forming - potential failure point.	High	Medium	20+	B1	9.4	275.3
T70	Ash (Common)	17	-	720	-	4	-	6	-	4	-	7	-	4	-	West	3	-	M	Wet cavity at 1.8m north east. Minor amounts minor deadwood. Potential hazard beam observed at 4m west.	Medium	Medium	10+	C1	8.6	234.5
T74	Lawson cypress	11	-	354	-	2.5	-	2	-	2	-	2	-	N/A	-	N/A	0.5	-	M	Slightly suppressed to north by security fence. Lighting column obstructing growth north.	High	High	40+	C1	4.2	56.6
T75	Maple	12	-	520	-	5	-	5	-	6	-	6	-	2	-	West	1.5	-	M	Exposed roots. Pruning wounds well occluded.	High	High	20+	B1	6.2	122.3
T76	Sycamore	12	-	540	-	6	-	4.5	-	6	-	5	-	3	-	East	2	-	M	Exposed roots. Pruning wounds well occluded. Cavity on north side next to fence.	High	Medium	20+	B1	6.5	131.9
T77	Maple	12	-	620	-	5	-	6	-	4	-	7	-	2.5	-	West	2	-	M	Dead ivy into canopy. Moderate minor deadwood.	Medium	Medium	10+	C1	7.4	173.9
T78	Maple	11	-	550	-	6.5	-	5	-	5.5	-	5	-	1.5	-	East	2	-	M	Previous pruning wound with decay at 1.5m east. Moderate amounts minor deadwood, minor cavities.	Medium	Medium	10+	C1	6.6	136.9
T79	Maple	12	-	630	-	6	-	5	-	5	-	6	-	3	-	West	3	-	M	Cavity on south at 1.5m. Exposed roots. Minor amounts minor deadwood.	Medium	Medium	10+	C1	7.6	179.6
T80	Sorb us, white beam	9	-	290	-	4	-	3.5	-	3	-	2.5	-	N/A	-	N/A	2	-	EM	Weak fork at 1m. Generally suppressed.	Medium	High	20+	C1	3.5	38.1
T81	Maple	12	-	650	-	7	-	6	-	6	-	8	-	2.5	-	West	2.5	-	M	Three main stems, forks at 2m. Bark wound with decay on north west side. Exposed damaged roots. Broken branches roadside to north.	Medium	Medium	20+	C1	7.8	191.2
G82	Whitebeam	9	-	520	-	4	-	5	-	5	-	5	-	N/A	-	N/A	2	-	M	Fruiting body on centre tree, with decay. Eastern tree has longitudinal crack, western tree better tree. Central and eastern tree c category, western tree b category.	Medium	Medium	10+	C2	6.2	122.3
G83	Whitebeam	9	-	500	-	4	-	5	-	3.5	-	4	-	N/A	-	N/A	2	-	M	Third tree from west has fruiting body. Girdling roots observed generally. Minor amounts of minor deadwood. Splits in bark. Rpas taken individually	Medium	Medium	20+	B2	6.0	113.1
G362	Maple (Norway)	8	-	250	-	0	-	0	-	4	-	4	-	N/A	-	N/A	2	-	M	6 trees. All have minor pruning wounds, some with minor bark damage at base.	Medium	Medium	20+	C2	3.0	28.3
G363	Maple (Norway)	8	-	350	-	0	-	0	-	5.5	-	5	-	N/A	-	N/A	1.5	-	M	5 trees. Minor deadwood throughout. Three trees very sparse canopy.	High	Medium	20+	C2	4.2	55.4
G390	Mixed maples	12	-	360	-	As on plan								N/A	-	N/A	2	-	M	Slightly suppressing each other. Bark damage at base.	Medium	Medium	20+	C2	4.3	58.6
G392	Maple (Norway)	11	-	400	-	As on plan								N/A	-	N/A	2.5	-	M	3 trees. Pruning wounds. Potential hazard beam at 2m east on southern tree, crossing branches.	Medium	Medium	20+	C2	4.8	72.4
T393	Maple (Norway)	11	-	350	-	4	-	5	-	4	-	4	-	2.5	-	South	2	-	M	Good shape.	High	High	20+	B1	4.2	55.4
G394	Maple (Norway)	12	-	440	-	5	-	5	-	5	-	4	-	N/A	-	N/A	2	-	M	Good shape. Slightly suppressed to west by adjacent tree.	High	High	20+	B1	5.3	87.6

Date; 2012, 20.03.15, 15.06.16	Site: Upper Heyford													Surveyor: MR/MGP					Client:	Dorchester Group			Job no:		D.0358	
						Spread								Crown clearance height												
Number	Species	Height	Estimate	Stem dia	Estimate	N	Estimate	S	Estimate	E	Estimate	W	Estimate	1st branch	Estimate	1st branch direction	Canopy	Estimate	Life stage	General observations	Structural condition	Physiological condition	ULE	Quality grading	RPA radius	RPA area
T1121	Lawson cypress	9	-	450	-	3	-	3	-	3	-	3	-	N/A	-	N/A	1	-	M	Open grown tree, neighbouring trees recently removed, twin stemmed at 2.5m.	Fair	Fair	10+	C1	4.0	49.3
G1122	Leyland Cypress	18	-	660	-	0	-	0	-	5	-	5	-	N/A	-	N/A	2.5	-	M	Two mature trees, minor bark damage, minor broken hung up branches.	Fair	Fair	10+	C2	7.9	197.1
G1123	Birch, cherry, elder	5	-	100	#	As on plan								N/A	-	N/A	0	-	EM	Group of scrubby trees adjacent to building, low value.	Fair	Fair	10+	C2	1.2	4.5
T1124	Lawson cypress	9	-	340	-	2	-	3	-	3	-	3	-	1	-	West	0	-	EM	Unbalanced crown, minor broken limbs.	Fair	Fair	10+	C1	4.1	52.3
T1125	Weeping willow	9	-	410	-	7	-	6	-	5	-	5	-	2.5	-	West	0.5	-	M	Dieback in crown, some moderate hung up branches, moderate deadwood.	Fair	Fair	10+	C1	4.9	76.1
T1126	Swedish whitebeam	8	-	510	-	2.5	-	3	-	3	-	3	-	0	-	-	2	-	M	Minor deadwood, good form	Good	Fair	10+	C1	6.1	117.7
T1127	Norway maple "crimson king"	10	-	340	-	5	-	5	-	4	-	5	-	2.5	-	South	1.5	-	M	Suppressed by neighbouring trees, saplings beneath crown, minor deadwood.	Fair	Fair	10+	C1	4.1	52.3
G1128	Lawson cypress	8	-	300	#	0	-	0	-	2.5	-	2.5	-	0	-	-	0	-	M	Two trees in group, minor dieback, self set elder growing through crowns.	Fair	Fair	10+	C2	3.6	40.7
G1129	Norway maple, cypress	11	-	300	#	As on plan								0	-	-	0	-	M	Group of trees adjacent to buildings, included unions, suppressed form.	Fair	Fair	10+	C2	3.6	40.7
T1130	Leyland Cypress	11	-	565.69	-	3.5	-	3.5	-	3.5	-	3.5	-	N/A	-	N/A	0.5	-	M	Twin stemmed tree, Lv power line through crown, adjacent to buildings.	Good	Fair	10+	C1	6.8	144.8
T1131	Norway spruce	11	-	400	#	3	-	3	-	3	-	3	-	N/A	-	N/A	0.5	-	M	Twin stemmed tree, open crown.	Good	Fair	10+	C1	4.8	72.4
T1132	Fir	11	-	346.41	-	2.5	-	2	-	2.5	-	2	-	N/A	-	N/A	N/A	-	EM	Multi stemmed tree, included unions at base, self set elder growing through crown.	Fair	Fair	10+	C1	4.2	54.3
T1133	Cherry	5	-	300	#	5	-	4	-	4	-	4	-	N/A	-	N/A	0.5	-	M	Multi stemmed tree, large areas of bark damage with small cavities, included unions at base	Fair	Poor	<10	C1	3.6	40.7
T1134	Swedish whitebeam	8	-	480	-	5	-	5	-	4	-	4	-	2	-	North	1	-	M	Pruned in the past, minor deadwood	Fair	Fair	10+	C1	5.2	83.7
T1135	Cherry	8	-	400	#	5	-	6	-	0	-	0	-	2	-	North-west	1	-	M	Two trees in group, open crowns.	Fair	Fair	<10	C2	4.8	72.4
G1136	Cherry	8	-	250	#	4	-	4	-	0	-	0	-	N/A	-	N/A	1	-	EM	Two trees, low crowns to east, one tree multi-stemmed.	Fair	Fair	10+	C2	3.0	28.3
G1138	Elder, ash	5	-	100	#	As on plan								N/A	-	N/A	N/A	-	SM	Area of self set trees, adjacent building recently demolished.	Fair	Fair	<10	C2	1.2	4.5
T1139	Norway maple "crimson king"	7	-	120	-	2.5	-	2.5	-	2.5	-	2.5	-	2	-	South	1.5	-	EM	Good firm, no obvious defects.	Good	Good	20+	C1	1.4	6.5
T1140	Apple	5	-	125	#	4	-	4	-	4	-	5	-	N/A	-	N/A	N/A	-	EM	Low canopy, poor form	Fair	Fair	10+	C1	1.5	7.1
T1141	Leyland Cypress	15	-	606.22	-	5	-	5	-	5	-	5	-	N/A	-	N/A	1	-	M	Mature tree adjacent to building, multi stemmed, included unions at base.	Fair	Fair	<10	C1	7.3	166.3
T1142	Cherry	8	-	350	#	3.5	-	3.5	-	3.5	-	3.5	-	N/A	-	N/A	N/A	-	M	Situated adjacent to building., suppressed	Fair	Fair	<10	C1	4.2	55.4
T1143	Lawson cypress, goat willow, elder	9	-	200	#	As on plan								N/A	-	N/A	N/A	-	EM	Group of self set trees, no access to stems.	Fair	Fair	<10	C2	2.4	18.1
T1144	Elm	12	-	660	-	6.5	-	7	-	8	-	7	-	1.5	-	South west	0.5	-	M	Tree on edge of hard standing, epicormic growth at base and on stem. Self set trees at base and under crown.	Good	Good	20+	B1	7.9	197.1
T1145	Elder	8	-	200	-	2	-	2	-	3	-	3	-	0	-	-	0.5	-	M	Self set tree.	Fair	Fair	<10	C1	2.4	18.1
T1146	Norway maple	10	-	300	-	4.5	-	5	-	5	-	5	-	2.5	-	West	2.5	-	EM	Good form, minor epicormic growth on stem.	Good	Good	20+	B1	3.6	40.7
G1149	Birch, hawthorn	8	-	200	-	3	-	3	-	2	-	3	-	N/A	-	N/A	0.5	-	EM	Self set trees adjacent to building, no obvious defects, largest values recorded.	Good	Good	10+	C1	2.4	18.1
T1150	Weeping willow	7.5	-	350	-	4	-	4	-	5	-	4	-	2.5	-	North	N/A	-	EM	Individual tree, minor deadwood.	Fair	Fair	10+	C1	4.2	55.4
T1151	Weeping willow, Cherry	10	-	500	-	As on plan								N/A	-	N/A	N/A	-	M	Three trees in row, no access to stems-overrun with bramble. Largest dbh estimated.	Fair	Fair	10+	C2	6.0	113.1
G1152	Ash, sycamore, willow, hawthorn, birch, elder	7	-	150	#	As on plan								N/A	-	N/A	N/A	-	EM	Area of self set trees located between buildings.	Fair	Fair	10+	C2	1.8	10.2

Date; 2012, 20.03.15, 15.06.16		Site: Upper Heyford												Surveyor: MR/MGP					Client:	Dorchester Group			Job no:		D.0358	
						Spread								Crown clearance height												
Number	Species	Height	Estimate	Stem dia	Estimate	N	Estimate	S	Estimate	E	Estimate	W	Estimate	1st branch	Estimate	1st branch direction	Canopy	Estimate	Life stage	General observations	Structural condition	Physiological condition	ULE	Quality grading	RPA radius	RPA area
T1153	Sycamore	9	-	400	#	5	-	5	-	5	-	5	-	N/A	-	N/A	1.5	-	EM	Tree located adjacent to road, no access to stem due to bramble.	Good	Good	20+	B1	4.8	72.4
T1154	Birch	9	-	350	-	5.5	-	4	-	4.5	-	4	-	2.5	-	West	1	-	M	Tree part of line adjacent to road, good form minor deadwood.	Good	Fair	10+	C1	4.1	52.3
T1155	Birch	12	-	510	-	6.5	-	6.5	-	6	-	6	-	2	-	South	N/A	-	M	Tree part of line adjacent to road, good form minor deadwood.	Good	Fair	10+	C1	5.6	99.9
T1156	Birch	12	-	470	-	6	-	5.5	-	5	-	7	-	1.5	-	North	0.5	-	M	Tree part of line adjacent to road, good form minor deadwood and branch stubs	Fair	Fair	10+	C1	5.6	97.8
T1157	Birch	12	-	440	-	7	-	6	-	8	-	5.5	-	2.5	-	South west	0.5	-	M	Tree part of line adjacent to road, good form minor deadwood and witches brooms, slight lean to the east.	Fair	Fair	10+	C1	4.8	72.4
T1158	Birch	12	-	520	-	5.5	-	4.5	-	6	-	4	-	2	-	South	0.5	-	M	Tree part of line, slight lean to the east. Minor deadwood.	Fair	Good	10+	C1	5.6	99.9
H1159	Hawthorn	4	-	150	#	0	-	0	-	1.5	-	1.5	-	N/A	-	N/A	N/A	-	M	Managed boundary hedgerow, good screen	Fair	Fair	20+	B2	1.8	10.2
T1160	Swedish whitebeam	7.5	-	425	#	4	-	5	-	5	-	4	-	1.5	-	North east	1	-	EM	Tree situated adjacent to hedgerow, stem obscured by ivy, some deadwood in crown.	Fair	Good	10+	B1	5.1	81.7
T1161	Horse chestnut	14	-	780	-	6	-	7	-	6	-	7	-	2	-	South	0.5	-	M	Twin stemmed, bleeding canker east side and loose bark to stem, leaf minor infection, stem partially obscured by ivy.	Fair	Fair	<10	C2	9.4	275.3
T1162	Ash	14	-	580	-	7	-	4	-	8	-	7	-	2	-	South	2	-	M	Mature tree located in group, minor deadwood, tree suppressed.	Fair	Good	10+	B2	6.7	141.9
T1163	Swedish white beam	9	-	440	-	3	-	4	-	4	-	4	-	1.5	-	West	1	-	M	Tree located in group, some deadwood in crown, suppressed.	Fair	Fair	10+	B2	5.0	79.8
T1164	Horse chestnut	12	-	650	-	5	-	7	-	6	-	6	-	2	-	North west	1	-	M	Tree located in group, minor deadwood, leaf minor infection, suppressed	Good	Fair	20+	B2	7.3	168.4
T1165	Ash	13	-	470	-	4	-	3	-	5	-	5	-	3	-	West	1	-	M	Tree located in group, some deadwood in crown, suppressed. Ivy obscuring stem.	Fair	Fair	20+	B2	5.6	99.9
T1166	Swedish white beam	9	-	520	#	4	-	3	-	4.5	-	4	-	2	-	South	1.5	-	M	Tree located in group, some deadwood in crown, suppressed. Ivy obscuring stem.	Fair	Fair	10+	B2	6.2	122.3
T1167	Birch	7.5	-	310	-	4	-	3.5	-	4	-	3.5	-	2	-	North west	1.5	-	EM	Poor form some dieback in crown, pruned in the part	Fair	Fair	<10	C1	3.6	40.7
T1168	Birch	15	-	600	-	7	-	7	-	8	-	8	-	3	-	West	2	-	M	Wide crown with over extended limbs, small cavities at branch collars, poor form	Fair	Fair	10+	C1	6.7	141.9
T1169	Birch, sycamore	10	-	250	#	4	-	4	-	0	-	0	-	N/A	-	N/A	N/A	-	EM	Self set trees adjacent to buildings.	Fair	Good	10+	C2	3.0	28.3
T1170	Weeping willow	10	-	450	-	5	-	5	-	5	-	5	-	N/A	-	N/A	N/A	-	M	Estimated values-no access, stem obscured by ivy	Fair	Fair	10+	C1	5.4	91.6
G1171	Rowan, oak, cypress, privet, cherry, hawthorn	7.5	-	200	-	As on plan								N/A	-	N/A	N/A	-	EM	Group of scrubby trees adjacent to existing buildings	Fair	Fair	<10	C2	2.4	18.1
T1172	Lawson cypress	7.5	-	300	#	3	-	3	-	3	-	3	-	N/A	-	N/A	N/A	-	M	Tre locate adjacent to access road, some branches subsiding	Fair	Fair	<10	C1	3.6	40.7
T1173	Lawson cypress	9	-	400	#	3	-	3	-	3	-	3	-	N/A	-	N/A	N/A	-	M	Good form, multi stemmed.	Fair	Good	10+	C1	4.8	72.4
G1174	Hawthorn, privet	5.5	-	150	#	2	-	2	-	0	-	0	-	N/A	-	N/A	N/A	-	M	Planted hedge grown up, ivy obscuring stems.	Fair	Fair	<10	C2	1.8	10.2
T1175	Lawson cypress	9	-	346.41	-	4	-	4	-	4	-	4	-	N/A	-	N/A	N/A	-	M	Multi stemmed tree, no access to stems, good form	Fair	Good	10+	C1	4.2	54.3
G1176	White pine	9	-	440	-	6	-	6	-	0	-	0	-	N/A	-	N/A	N/A	-	M	Group of two trees, branches on floor.	Good	Good	20+	B2	5.3	87.6
T1177	Lawson cypress	9.5	-	450	-	3	-	3	-	4	-	4	-	N/A	-	N/A	N/A	-	M	Multi stemmed tree, good form	Fair	Good	10+	C1	5.4	91.6
G1178	Cherry, crab	5.5	-	350	-	As on plan								N/A	-	N/A	N/A	-	EM	Group of small trees, largest dbh recorded., some dieback and minor dead trees.	Fair	Fair	<10	C2	4.2	55.4
T1179	Lawson cypress	7.5	-	200	#	2	-	2	-	2	-	2	-	N/A	-	N/A	N/A	-	M	Multi-stemmed tree, deadwood within.	Fair	Fair	<10	C1	2.4	18.1
G1180	Cherry laurel cherry, elder.	5.5	-	125	#	As on plan								N/A	-	N/A	N/A	-	EM	Scrubby group, overgrown	Fair	Fair	<10	C2	1.5	7.1
T1181	Wild cherry	8.5	-	460	-	7	-	6	-	5	-	5	-	2	-	North	N/A	-	M	Poor form, unbalanced crown, canopy on ground.	Fair	Fair	10+	C1	5.5	95.7
G1182	Leyland cypress	17	-	606.22	-	6	-	6	-	0	-	0	-	N/A	-	N/A	N/A	-	M	Group of multi stemmed trees adjacent to building.	Fair	Fair	10+	C2	7.3	166.3

Date; 2012, 20.03.15, 15.06.16	Site: Upper Heyford													Surveyor: MR/MGP					Client:	Dorchester Group			Job no:		D.0358	
						Spread								Crown clearance height												
Number	Species	Height	Estimate	Stem dia	Estimate	N	Estimate	S	Estimate	E	Estimate	W	Estimate	1st branch	Estimate	1st branch direction	Canopy	Estimate	Life stage	General observations	Structural condition	Physiological condition	ULE	Quality grading	RPA radius	RPA area
T1184	Spruce	15	-	450	-	4.5	-	4.5	-	4.5	-	4.5	-	N/A	-	N/A	N/A	-	M	Mature tree adjacent to access road, low canopy, no obvious defects.	Fair	Fair	10+	C1	5.4	91.6
T1185	Yew	5	-	150	-	3	-	3	-	3	-	3	-	N/A	-	N/A	N/A	-	EM	Shrubby and multi stemmed., self set elder though out	Good	Good	20+	B1	1.8	10.2
SM1186	Elder cherry	5.5	-	100	-	As on plan								N/A	-	N/A	N/A	-	EM	Scrubby vegetation adjacent building	Fair	Fair	<10	C2	1.2	4.5
T1187	Fir	10.5	-	200	-	2.5	-	2.5	-	2.5	-	2.5	-	N/A	-	N/A	0.5	-	EM	Good form, adjacent tree felled	Good	Good	20+	B1	2.4	18.1
G1494	Elder, hawthorn	4.0	-	150	#	2.0	-	2.0	-	0.0	-	0.0	-	N/A	-	N/A	N/A	-	EM	Shrubby self set trees located on boundary, overrun with bramble.	Fair	Fair	<10	C2	1.8	10
T1495	Plum (Purple)	5.5	-	225	-	2.0	-	3.0	-	3.0	-	2.5	-	0.5	-	East	0.5	-	M	Good form, low canopy	Good	Good	10+	C1	2.7	23
T1516	Cypress	17.0		600		4.0		3.0		5.0		5.0		N/A		N/A	N/A		M	Three trees adjacent building, dense canopy	Good	Good	10+	C1	7.2	163

APPENDIX 3

DRAFT ARBORICULTURAL CONSTRAINTS PLAN

KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS:5837:2012
- Shrub Mass / Offsite Tree
- Tree to be Removed
- Existing Shade Pattern
- Indicative Shade Pattern
- Indicative Ultimate Canopy Growth

Note - The ultimate shade pattern is based upon indicative ultimate height figures for individual tree species as detailed within Cassell's Trees of Britain and Northern Europe (2003). Ultimate height figures for different species relates to the potential height a tree may reach in optimal growing conditions. This does not necessarily mean trees within the site will reach this height as this will vary greatly depending on site conditions and the condition of individual trees.

N

0 50m

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Revisions:	Date
A • First issue	06/07/2016

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Heyford Park

Arboricultural Constraints

Drawing Ref: **D.0358_22**

Client : **Dorchester Group**

1 : 1000 @ A1
Date : 06/07/2016
Drawn by : AD
Checked by : MP

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APPENDIX 4

TREE RETENTION AND REMOVAL PLAN

KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS:5837:2012
- Shrub Mass / Offsite Tree
- Tree to be Removed

N

0 50m

| T 01285 641717 | F 01285 642348 | www.pegasuspg.co.uk |

Revisions:		Date
	First issue	22/06/2016
A	• New parameter plan inserted	14/09/2016
B	• New layout inserted	20/09/2016

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Heyford Park

Tree Retention & Removal Plan

Drawing Ref: **D.0358_21B**

Client : **Dorchester Group**

1 : 1000 @ A1
Date : 20/09/2016
Drawn by : JS
Checked by : MP

Pegasus Environmental

APPENDIX 5

ARBORICULTURAL IMPACT ASSESSMENT SCHEDULE

		Arboricultural Impact Assessment Significance Matrix					
		Level of Impact					
		High	**Medium**	**Low**	**Slight**	**None**	
		e.g. removal required to facilitate development. Excessive root severance. Excessive above ground pruning. Hedgerows: >50% loss of overall length.	e.g root damage, soil compaction or above ground impacts tree management works unacceptable in terms of BS3998:2010. Hedgerows: >25% loss of overall length.	e.g. minor fine root loss, installation of no dig surfacing, temporary ground protection. Moderate tree works within the parameters of BS3998:2010. Hedgerows: 5-10% loss of overall length.	e.g.very minor works within root protection areas for example the installation of lightweight fencing or soft landscaping. Hedgerows: <5% loss of overall length.	E.g. trees located at a significant distance from development and construction activities.	
BS5837:2012 Quality Assessment Category	**A**	Major	Major	Moderate	Minor	None	**Significance of effect**
	B	Major	Moderate	Minor	Insignificant	None	
	C	Moderate	Minor	Insignificant	Insignificant	None	
	U	Minor	Minor	Insignificant	Insignificant	None	
		Significance of effect					

Significance of effect - definitions	
Major	Removal/acute damage to structural integrity/vitality/appearance of a high quality arboricultural feature. Depending on circumstances, may result in the loss of all/greater majority of public visual amenity value. Mitigation planting unlikely to be effective except in the long term (40+ years).
Moderate	In the case of damage: unlikely to give rise to tree death but likely to noticably reduce vitality and deterioration of appearance in the short and medium term, with corresponding reduction in public visual amenity value where relevant. Tree removals that can be effectively mitigated in the medium term (20-40 years). For example notable crown dieback, foliage discolouration, low leaf density, or tree management works unacceptable in terms of BS3998:2010.
Minor	Short-term damage with limited distribution that can be reasonably compensated for by new growth. Unlikely to result in observable symptoms of damage in relation to structural integrity/vitality/appearance. No obvious impact on public visual amenity. Tree removals that can be mitigated in the short-term (10-20 years)
Insignificant	Minimal damage in very small amounts. No obvious impact on public visual amenity.
None	No impact to above or below ground components of tree reasonably anticipated.

Arboricultural Impact Schedule Site: Heyford Phase 9 Ref:D.0358

No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T61	Maple	C1	Direct impacts from construction activities. Footpath to be constructed within RPA.	Medium	Minor	Footpath to be constructed using a no dig methodology in accordance with an Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
T62	Whitebeam	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T63	Sycamore	B1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Moderate	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Minor	Retain
T64	Ash (Common)	C1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
T65	Whitebeam	B1	• Remove as part of proposals	High	Major	New tree planting as part of landscaping proposals	Medium	Moderate	Remove
T66	Whitebeam	B1	• Remove as part of proposals	High	Major	New tree planting as part of landscaping proposals	Medium	Moderate	Remove
T67	Ash (Common)	C1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
T68	Ash (Common)	B1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Moderate	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Minor	Retain
T69	Chestnut (Horse)	B1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Moderate	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Minor	Retain
T70	Ash (Common)	C1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
T74	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T75	Maple	B1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Moderate	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Minor	Retain

Arboricultural Impact Schedule Site: Heyford Phase 9 Ref:D.0358

No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T76	Sycamore	B1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Moderate	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Minor	Retain
T77	Maple	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T78	Maple	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T79	Maple	C1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
T80	Sorbus, whitebeam	C1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
T81	Maple	C1	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
G82	Whitebeam	C2	Direct impacts from construction activities. Concrete footpath to be removed and replaced within the RPA	Medium	Minor	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction.	Low	Insignificant	Retain
G83	Whitebeam	B2	Partial removal to facilitate access. Concrete footpath to be demolition and replaced within RPA. Potential direct contact from general construction activities.	High	Major	Footpath to be demolition and replaced in accordance with a detailed Arboricultural method statement. Temporary tree protection fencing to BS.5837/I2012 to be installed during demolition and construction. Removal works to be carried out in accordance with BS.3998:2010. New tree planting to compensate for tree loss.	Medium	Moderate	Partial removal
G362	Maple (Norway)	C2	Partial removal to facilitate access. Potential direct contact from construction activities.	Medium	Minor	Temporary tree protection fencing to BS.5837:2012. Removal works to be carried out in accordance with BS.3998:2010. New tree planting to compensate for tree loss	Low	Insignificant	Partial removal
G363	Maple (Norway)	C2	Partial removal to facilitate access. Potential direct contact from construction activities.	Medium	Minor	Temporary tree protection fencing to BS.5837:2012. Removal works to be carried out in accordance with BS.3998:2010. New tree planting to compensate for tree loss	Low	Insignificant	Partial removal
G390	Mixed maples	C2	Located away from main development location. No significant impacts envisaged	None	None	New tree planting as part of landscaping proposals	None	None	Retain
G392	Maple (Norway)	C2	Located away from main development location. No significant impacts envisaged	None	None	New tree planting as part of landscaping proposals	None	None	Retain
T393	Maple (Norway)	B1	Located away from main development location. No significant impacts envisaged	None	None	New tree planting as part of landscaping proposals	None	None	Retain
G394	Maple (Norway)	B1	Potential direct impacts from footpath construction activities.	Low	Minor	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain
T1121	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1122	Leyland Cypress	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1123	Birch, cherry, elder	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1124	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1125	Weeping willow	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1126	Swedish whitebeam	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove

Arboricultural Impact Schedule Site: Heyford Phase 9 Ref:D.0358

No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T1127	Norway maple "crimson king"	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1128	Lawson cypress	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1129	Norway maple, cypress	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1130	Leyland Cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1131	Norway spruce	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1132	Fir	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1133	Cherry	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1134	Swedish whitebeam	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1135	Cherry	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1136	Cherry	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1138	Elder, ash	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1139	Norway maple "crimson king"	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1140	Apple	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1141	Leyland Cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1142	Cherry	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1143	Lawson cypress, goat willow, elder	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1144	Elm	B1	Potential direct impacts from construction and demolition activities.	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment.	Low	Minor	Retain
T1145	Elder	C1	Potential direct impacts from construction and demolition activities.	Medium	Minor	Temporary tree protection fencing to deter potential encroachment.	Low	Insignificant	Retain
T1146	Norway maple	B1	Potential direct impacts from footpath construction activities.	Low	Minor	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain
G1149	Birch, hawthorn	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1150	Weeping willow	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1151	Weeping willow, Cherry	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1152	Ash, sycamore, willow, hawthorn, birch, elder	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1153	Sycamore	B1	• Remove as part of proposals	High	Major	New tree planting as part of landscaping proposals	Medium	Moderate	Remove
T1154	Birch	C1	Potential impacts from general construction activities. Footpath to be constructed in outer RPA	Medium	Minor	Demolition and construction activities to be carried out in accordance with the arboricultural method statement. Temporary tree protection fencing to deter potential encroachment. Footpath to be constructed using a no dig methodology.	Low	Insignificant	Retain
T1155	Birch	C1	Potential impacts from general construction activities. Footpath to be constructed in outer RPA	Medium	Minor	Demolition and construction activities to be carried out in accordance with the arboricultural method statement. Temporary tree protection fencing to deter potential encroachment. Footpath to be constructed using a no dig methodology.	Low	Insignificant	Retain
T1156	Birch	C1	Potential direct impacts from demolition and construction activities.	Medium	Minor	Demolition and construction activities to be carried out in accordance with the arboricultural method statement.	Low	Insignificant	Retain
T1157	Birch	C1	Potential direct impacts from demolition and construction activities.	Medium	Minor	Demolition and construction activities to be carried out in accordance with the arboricultural method statement.	Low	Insignificant	Retain
T1158	Birch	C1	Potential direct impacts from demolition and construction activities.	Medium	Minor	Demolition and construction activities to be carried out in accordance with the arboricultural method statement.	Low	Insignificant	Retain
H1159	Hawthorn	B2	Potential impacts from general construction activities.	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain
T1160	Swedish whitebeam	B1	Potential impacts from general construction activities.	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain

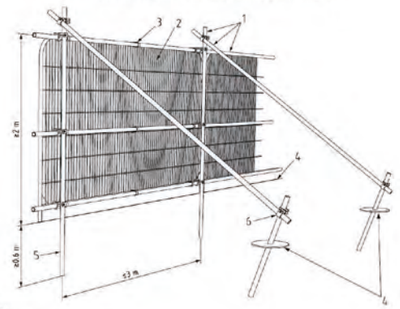
Arboricultural Impact Schedule Site: Heyford Phase 9 Ref:D.0358

No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T1161	Horse chestnut	C2	Potential impacts from general construction activities.	Medium	Minor	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain
T1162	Ash	B2	Potential impacts from general construction activities.	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain
T1163	Swedish white beam	B2	Potential impacts from general construction activities.	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment.	Slight	Insignificant	Retain
T1164	Horse chestnut	B2	Potential impacts from general construction activities. Footpath to be constructed in outer RPA	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment. Footpath to be constructed using a no dig methodology.	Low	Minor	Retain
T1165	Ash	B2	Potential impacts from general construction activities. Footpath to be constructed in outer RPA	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment. Footpath to be constructed using a no dig methodology.	Low	Minor	Retain
T1166	Swedish white beam	B2	Potential impacts from general construction activities. Footpath to be constructed in outer RPA	Medium	Moderate	Temporary tree protection fencing to deter potential encroachment. Footpath to be constructed using a no dig methodology.	Low	Minor	Retain
T1167	Birch	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1168	Birch	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1169	Birch, sycamore	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1170	Weeping willow	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1171	Rowan, oak, cypress, privet, cherry, hawthorn	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1172	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1173	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1174	Hawthorn, privet	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1175	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1176	White pine	B2	• Remove as part of proposals	High	Major	New tree planting as part of landscaping proposals	Medium	Moderate	Remove
T1177	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1178	Cherry, crab	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1179	Lawson cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1180	Cherry laurel cherry, elder.	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1181	Wild cherry	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
G1182	Leyland cypress	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1184	Spruce	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1185	Yew	B1	• Remove as part of proposals	High	Major	New tree planting as part of landscaping proposals	Medium	Moderate	Remove
SM1186	Elder cherry	C2	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1187	Fir	B1	• Remove as part of proposals	High	Major	New tree planting as part of landscaping proposals	Medium	Moderate	Remove
G1494	Elder, hawthorn	C2	Potential direct impacts from construction and demolition activities.	Medium	Minor	Temporary tree protection fencing to deter potential encroachment.	Low	Insignificant	Retain
T1495	Plum (Purple)	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove
T1516	Cypress	C1	• Remove as part of proposals	High	Moderate	New tree planting as part of landscaping proposals	Medium	Minor	Remove

APPENDIX 6

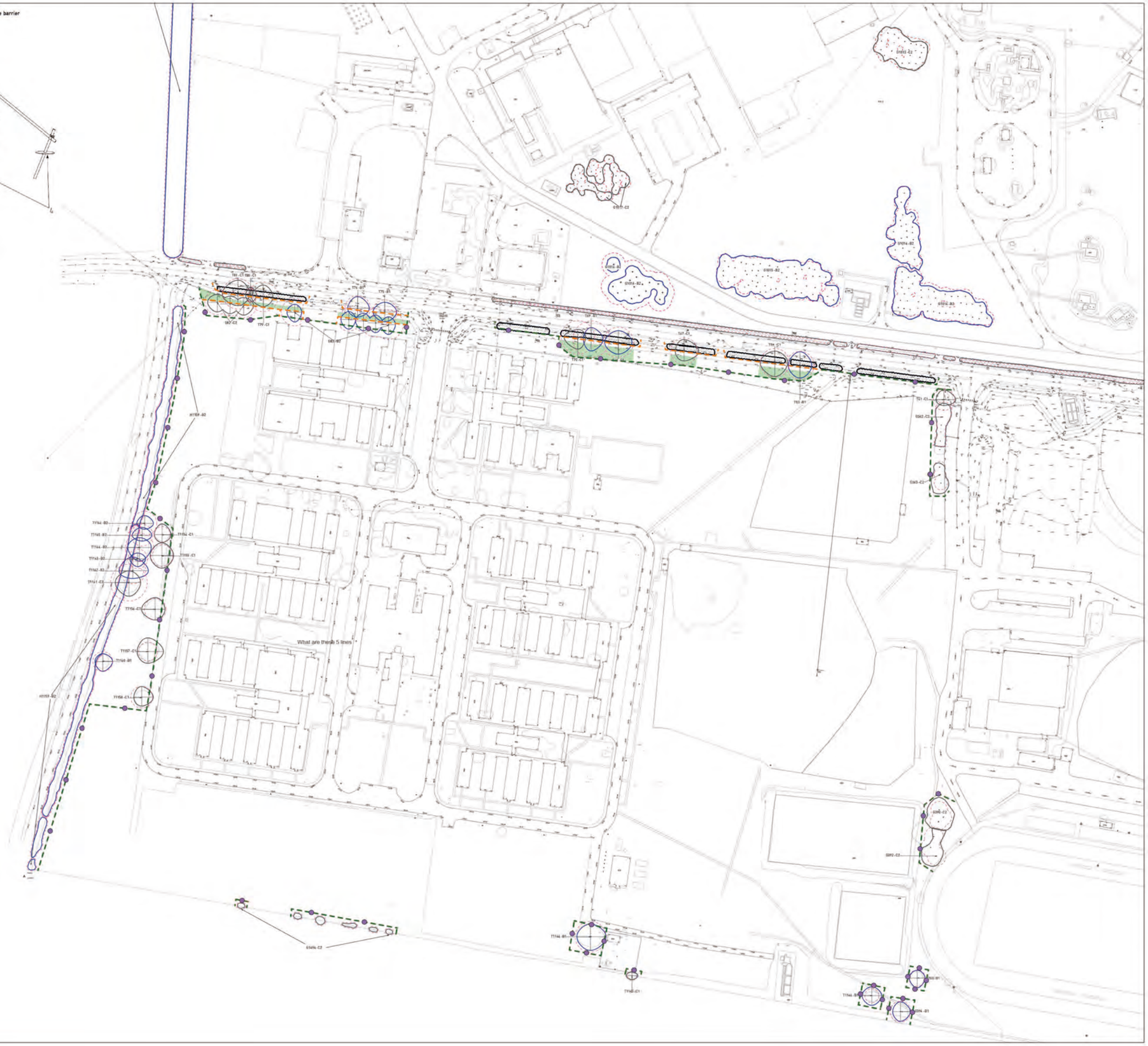
TREE PROTECTION PLAN: DEMOLITION

BS:5837:2012 Figure 2 Default specification for protective barrier



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

For more details refer to BS:5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.20



KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS:5837:2012
- Shrub Mass / Offsite Tree
- Tree Protection Barrier (Primary Location) to BS:5837:2012
- Tree Protection Barrier (Secondary Location) to BS:5837:2012
- Entry/Exit Point for Tree Protection Barrier
- All weather information notices to read 'Construction Exclusion Zone - Keep out' A2 in size. To be attached to tree protection barriers
- Temporary Ground Protection to BS:5837:2012

N

0 50m

T 01285 641717 | F 01285 642348 | www.pegasuspg.co.uk

Revisions:		Date
-	First issue	22/06/2016
A	Tree protection amended	10/10/2016

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Heyford Park

Tree Protection Plan - Demolition

Drawing Ref: **D.0358_24A**

Client : **Dorchester Group**

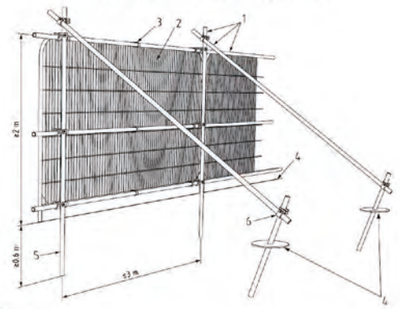
1 : 1000 @ A1
Date : 10/10/2016
Drawn by : JS
Checked by : MP

Pegasus Environmental

APPENDIX 7

TREE PROTECTION PLAN: CONSTRUCTION

BS:5837:2012 Figure 2 Default specification for protective barrier



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

For more details refer to BS:5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.20

KEY

BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS:5837:2012
- Shrub Mass / Offsite Tree
- Tree Protection Barrier (Primary Location) to BS:5837:2012
- Tree Protection Barrier (Secondary Location) to BS:5837:2012
- Entry/Exit Point for Tree Protection Barrier
- All weather information notices to read 'Construction Exclusion Zone - Keep out' A2 in size. To be attached to tree protection barriers
- Temporary Ground Protection to BS:5837:2012
- Area of 'No Dig' Construction to BS:5837:2012

N

0 50m

| T 01285 641717 | F 01285 642348 | www.pegasuspg.co.uk |

Revisions:	Date
- First issue	20/09/2016

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Heyford Park

Tree Protection Plan - Construction

Drawing Ref: **D.0358_25**

Client : **Dorchester Group**

1 : 1000 @ A1
Date : 20/09/2016
Drawn by : JS
Checked by : MP

Pegasus Environmental

APPENDIX 8

SITE INDUCTION FORM – TREE AWARENESS

TREE AWARENESS – SITE INDUCTION

SITE NAME:

DATE OF INDUCTION:

Trees are an important part of this development. They must be kept undamaged so that they can fully benefit the finished project well into the future. All persons working on this site have a responsibility to be aware of trees and to abide by tree protection procedures.

How trees can be damaged – think roots!

Above the ground – contacts and impacts with branches and trunk (machine operations eg teleporters, high-sided vehicles, crane use, fixings to trunk, unauthorised cutting back of branches)

Below the ground – root severance (eg soil stripping during site clearance, excavations) and root damage resulting from compaction of soil near trees (eg vehicles, pedestrian, storage of materials). Effects of root damage take time to become obvious, but will result in disfiguring dieback of leaves and branches, or even tree death.

Tree protection procedures

Provided that the simple steps are followed most tree protection is straightforward:

- Stay out of Root Protection Areas (RPAs). These are the areas of ground surrounding retained trees that are protected by barriers. If you need to go into a RPA, you must first gain authorisation from the Site Manager
- No construction activity of any description within RPAs, eg soil stripping, cement mixing, services installation, storage of materials etc
- No fires within 20m of trunk of any retained tree/hedgerow
- If work within an RPA is needed, advice must be sought from the project arboriculturist
- If damage to a retained tree/hedgerow does occurs, inform the Site Manager, who will then seek advice from the project arboriculturist regarding any remediation measures that may be necessary.

Remember

Planning Authority enforcement action needs to be avoided:

- ‘Breach of Conditions’ notices can prevent a site from being signed-off.
- ‘Temporary Stop Notices’ halt site operations and result in associated high costs.

Be aware of tree protection and stick to the procedures within the AMS. Tree protection is straightforward. If in doubt –ask!

I have received site induction in tree awareness and tree protection procedures

PRINT NAME

SIGN

DATE

APPENDIX 9

CONSTRUCTION EXCLUSION ZONE SIGN

Pegasus
Arboriculture

CONSTRUCTION EXCLUSION ZONE KEEP OUT

THIS BARRIER MUST BE MAINTAINED IN ACCORDANCE WITH
THE APPROVED PLANS & DRAWINGS FOR THIS DEVELOPMENT

APPENDIX 10

CELLWEB INSTALLATION METHOD STATEMENT

Geosynthetics Ltd
Fleming Road
Harrowbrook Industrial Estate
Hinckley, Leicestershire
LE10 3DU
Tel 01455 617139 Fax 01455 617140
sales@geosyn.co.uk
www.geosyn.co.uk

Method Statement

For The Installation of Cellweb Tree Root Protection System.

When considering damage to tree roots, in applications of vehicular access and parking, the risk of oxygen depletion caused by compaction of subsoil's, site clearance damaging the root source and type of reinforcement are areas which need to be given due consideration.

Other risk factors are:

- Creating an impermeable surface
- Causing a rise in the water table due to construction
- Increasing ground level
- Contamination of subsoil's

1. Compaction

When looking at site conditions and use, the following information should be considered to enable a load bearing structure capable of supporting traffic to be proposed:

- Californian Bearing ratio (CBR) – Standard test method for measuring soil strength
- Soil types
- Water table
- Maximum load (vehicles)
- Acceptable rut depth
- Reinforcement type — Cellweb Cellular Confinement 150mm deep
- Type and Depth of engineered infill material — Clean, angular. Usually 40mm to 20mm.

2. Dig (site strip)

Site stripping does damage some root structure prior to construction; however, the use of no-dig construction elevates the access road requiring edge protection.

3. No dig

3.1. Remove surface vegetation	Use a suitable herbicide suitable for the specific vegetation and not harmful to the tree root system
3.2. Place geotextile separation filtration layer	Use a Treetex T300 non woven Goetextile over the prepared sub-grade. Overlap dry joints by 300mm. The three dimensional cell structure, is formed by ultrasonically welding polyethylene (perforated) strips / panels together to create a three dimensional network of interconnecting cells. A high degree of frictional interaction is developed between infill and the cell wall, increasing the stiffness of the system
3.4. Edge restraint	A treated timber edging is usually acceptable.

4. Cellular Confinement and Backfill Material.

Expand the Cellweb 2.56m wide panels to the full 8.1 metre length. Pin the Cellweb panels with staking pins to anchor open the cells and staple adjacent panels together to create a continuous mattress. Infill the Cellweb with a no fines angular granular fill (typically 4-20mm) within each open cell. The use of cellular confinement reduces the bearing pressure on the subsoil by stabilising aggregate surfaces against rutting under wheel loads. Comparisons between cellular confinement and traditional aggregate and geogrid-reinforced structures demonstrate a 50% reduction in construction thickness of the granular material.

5. Surfacing Options

Block Paving:
5.1. Lay second layer of Treetex T300 Geotextile separation fabric over the infilled Cellweb sections
5.2. Lay sharp sand bedding layer compacted with a vibro compaction plate to recommended depth.
5.3. Place block paviors as per manufacturers instructions.

Tarmac:
Place 25mm surcharge of the granular material above the Cellweb system and lay the bitumen base and wearing courses.

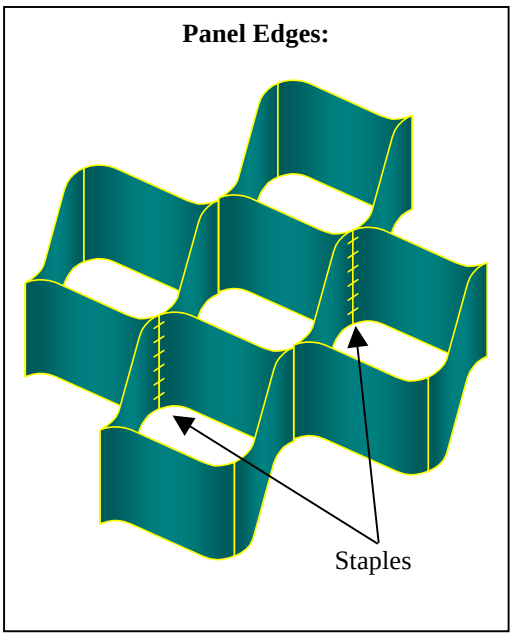
Loose Gravel:
5.4. Ensure Cellweb is completely filled.
5.5. Place decorative aggregate to required depth
NOTE: A treated timber edge should be provided to restrict gravel movement.

Grass Blocks:
5.6. Place second layer of Treetex T300 Geotextile separation fabric over the infilled Cellweb sections
5.7. Place 50/50 rootzone bedding layer to the required depth
5.8. Lay recycled Duo Block 500 Grass Protection System infilled with 50/50 rootzone mix.
5.9. Seed as per architects instructions.
(Alternatively the Grass Blocks may be infilled with gravel.)

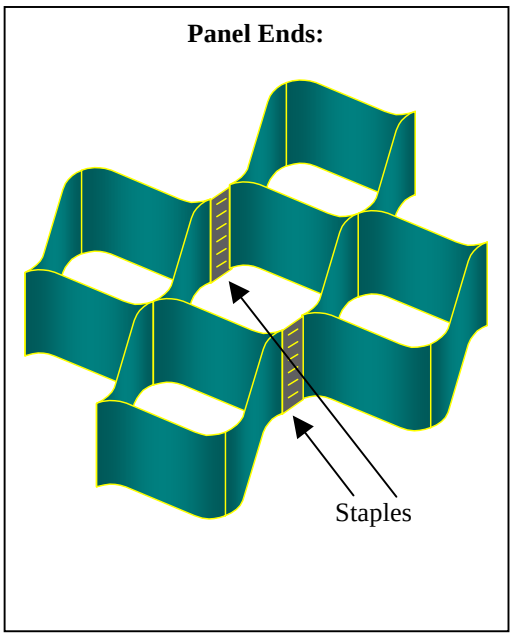
Concrete Slab
6.0 Lay Cellweb as previous and place second layer of Treetex Geotextile directly over the filled panels. Pour concrete base as specified.

Below are illustrations of the correct stapling procedure for joining both edges and ends of panels together;

Panel Edges:



Panel Ends:



APPENDIX 11

TREE PROTECTION SITE MONITORING FORM

Tree protection site monitoring report

Client and site name:		Pegasus ref:
Date:	Inspector:	Site manager:
Tree protection barriers in locations as shown on approved details? Yes / No Notes:		
Tree protection barriers constructed in accordance with approved details? Yes / No Notes:		
Details of any incursions into Root Protection Areas (RPAs)? Yes / No Notes:		
Condition of retained trees? Notes:		
Actions. Details of any remedial action required?		
Other comments		
Next inspection due date	Email copies to Tree Officer, Site manager?	