

# **PLANNING APPLICATION FOR NEW SUBSTATION**

## **UPPER HEYFORD (PHASE 3)**

# **TREE PROTECTION PLAN AND ARBORICULTURAL METHOD STATEMENT**

## **ON BEHALF OF DORCHESTER GROUP**

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

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APPENDIX 3 – SITE INDUCTION FORM - TREE AWARENESS

## REVISIONS

Date	Rev	Description	Initials
31.10.14	A	First issue	PC

## 1. INTRODUCTION

- 1.1 It is proposed to construct a small electricity substation, 4 metres wide by 4 metres wide and 4 metres high in a location between trees T298 and G300 at Upper Heyford.

### APPENDIX 1 – SUBSTATION ELEVATIONS & FLOOR PLAN

- 1.2 This report has been produced by Pegasus Group in order to discharge Condition 17 which states that:

*"No works or development shall take place in connection with each phase or sub phase of the development until a scheme for the protection of the existing trees, hedgerows or such other landscape features as may exist that are identified for retention under Condition 11 [relates to Scheduled Ancient Monuments – Pegasus Comment] has been agreed in writing with the Local Planning Authority. The scheme shall include:*

- a. A plan that shows the position, crown spread and Root Protection Area (paragraph 5.2.2 of BS5837) of every retained tree within that phase or subphase and on neighbouring or nearby ground to the site in relation to the approved plans and particulars. The positions of all trees to be removed shall be indicated on this plan.*
- b. The details of each retained tree as required at paragraph 4.2.6 of BS5837 in a separate schedule.*
- c. A schedule of tree works for all the retained trees in paragraphs (a) and (b) above, specifying pruning and other remedial or preventive work, whether for physiological, hazard abatement, aesthetic or operational reasons. All tree works shall be carried out in accordance with BS3998, 1989, Recommendations for Tree Work.*
- d. Written proof of the credentials of the arboricultural contractor authorised to carry out the schedule tree works.*
- e. The details and positions (Shown on the plan at paragraph (A) above) of the Ground Protection Zones (Section 9.3 of BS5837)*
- f. The details and positions (shown on the plan at paragraph (a) above) of the Tree Protection Barriers (Section 9.2 of BS5837), identified separately where*

*required for difference phases of construction work (eg demolition, construction, hard landscaping). The tree protection barriers must be erected prior to each construction phase commencing and remain in place, and undamaged for the duration of that phase. No works shall take place on the next phase until the Tree Protection Barriers are repositioned for that phase.*

- g. The details and positions (shown on the plan at paragraph (a) above) of the Construction Exclusion Zones (Section 9 of BS5837).*
- h. The details and positions (shown on the plan at paragraph (a) above) of the underground service runs (Section 11.7 of BS5837).*
- i. The details of any changes in levels or the position of and proposed excavations within 5 metres of the Root Protection Area (para 5.2.2 Of BS5837) of any retained tree. Including those on neighbouring or nearby ground.*
- j. The details of any special engineering required to accommodate the protection of retained trees (Section 10 of BS5837), (eg in connection with foundations, bridging, water features, surfacing).*
- k. The details of the working methods to be employed with the demolition of buildings, structures and surfacing within or adjacent to the Root Protection Areas of retained trees.*
- l. The details of the working methods to be employed for the installation of drives and paths within the Root Protection Areas of retained trees in accordance with the principles of 'No Dig' construction.*
- m. The details of the working methods to be employed with regard to the access for and use of heavy, large, difficult to manoeuvre plant ( including cranes and their loads, dredging machinery, concrete pumps, piling rigs, etc) on site.*
- n. The details of the working methods to be employed with regard to site logistics and particular regard to ground compaction and phytotoxicity.*
- o. The details of the method to be employed for the stationing, use and removal of site cabins within any Root Protection Areas (paragraph 9.2.3 of BS5837).*

*p. The details of tree protection measures for the hard landscaping phase (Sections 13 and 14 of BS5837).*

*q. The timing of the various phases of the works or development in the context of tree protection measures.*

*Implementation shall be in accordance with the approved scheme unless otherwise agreed in writing by the Local Planning Authority.*

*Reason – to ensure the continued health of retained trees and in the interests of the visual amenity of the area, to ensure the integration of the development in to the existing landscape and to comply with Policy C4 of the South East Plan 2009 and Policy C28 of the Cherwell Local Plan.*

It is noted that the British Standards references given within the condition relate to a previous edition of BS5837 published in 2005. Where possible to do so, corresponding elements of the 2012 revision of the standard are applied to the requirements of the condition.

## **2. ARBORICULTURAL IMPLICATIONS**

- 2.1 The proposed substation is not located within the root protection area (RPA) of any trees or under the canopy of any trees. As a consequence no ground protection or tree works would be required.
- 2.2 Vehicular access to the site is from an existing hard surfaced highway immediately to the east.
- 2.3 Underground service runs to the substation would be from the road to the east and would not affect the RPAs of retained trees.
- 2.4 No demolition or removal of hard surfaces within RPAs would be required in order to construct the substation. No new hard surfacing would be installed within the RPAs of retained trees.
- 2.5 No changes in levels or special engineering methods are required for construction of the substation.
- 2.6 There is potential that the trunks, canopies and roots of adjacent trees could be accidentally damaged by construction machinery. For this reason temporary tree protection fencing in accordance with BS5837:2012 should be installed before any commencing any construction works associated with the substation.

### 3. SCHEME OF TREE PROTECTION

3.1 A Tree Protection Plan (TPP) is appended to this document.

#### APPENDIX 2 – TREE PROTECTION PLAN

3.2 The TPP details the locations and specifications of tree protection barriers and how they shall be built. These robust structures, constructed in accordance with the specifications set out within BS5837:2012 will be erected prior to the commencement of any other works on site and shall remain in place until their removal is authorised in writing by the local planning authority. All weather A3-sized notices shall be fixed to the barriers at the locations indicated on the TPP and state: 'CONSTRUCTION EXCLUSION ZONE – NO ACCESS'.

3.3 In accordance with BS5837:2012 the TPP is superimposed onto the site layout plan and based on the topographical survey.

3.4 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
- Spatial requirements for:
  - a) *Temporary and permanent apparatus and service runs*
  - b) *Foundation excavations and construction works*
  - c) *Cranes, plant scaffolding and access during works*
  - d) *Site huts, toilets (including drainage) and other temporary structures*
  - e) *Storage (either temporary or long-term) of materials, spoil, fuel and mixing of concrete*
- Adequate allowance for foundations of such walls and backfillings

- 3.5 The tree protection measures shown on the Tree Protection Plan must be implemented with specific reference to the following arboricultural method statement.



## 4. ARBORICULTURAL METHOD STATEMENT (AMS)

### Purpose

- 4.1 The aim of this AMS is to prevent and/or minimise the impacts of construction works approved by planning permission on trees that are to be retained as part of the development. It gives step-by-step guidance and specifications for any works which have the potential to result in loss of, or damage to, retained trees.
- 4.2 The AMS forms part of a Tree Protection Scheme for the site. Reference must be made, as appropriate, to the attached Tree Protection Plan (TPP).
- 4.3 The AMS must be used as a reference source for site operatives in order to guide tree-related aspects of the construction process. A precautionary approach is required.
- 4.4 The AMS must be referred to by site managers during the construction process itself. A copy of this document must therefore be kept available in the main Site Office for quick and easy reference.

### Informative - how tree damage can occur

#### 4.5 *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.

#### 4.6 *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.

4.7 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.

4.8 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.

#### **Key personnel and individual responsibilities**

4.9 The Developer (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.

Contact: Barry Dell – Project Manager (Dorchester Group) 01869 238410/07548 650556 [b.dell@dorchestergrp.com](mailto:b.dell@dorchestergrp.com)

- 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.

Contact: Matthew Reid, Email: [Matthew.Reid@pegasuspg.co.uk](mailto:Matthew.Reid@pegasuspg.co.uk), Tel: 01285 888 028.

- The LPA Tree Officer (Cherwell District Council)

Contact: Jon Brewin – Arboricultural Officer 01295 221708 / 07854  
216783 [jon.brewin@cherwellandsouthnorthants.gov.uk](mailto:jon.brewin@cherwellandsouthnorthants.gov.uk)

- 4.10 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**

- 4.11 The AMS must be used as a reference source for site operatives in order to guide tree-related aspects of the construction process. A precautionary approach is required.
- 4.12 The AMS is appropriate to the proposals and the planning conditions that apply to the site.
- 4.13 The AMS must be referred to by site managers during the 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**

- 4.14 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/protected 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 3 – SITE INDUCTION FORM - TREE AWARENESS**

- 4.15 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.

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

### **Sequence of Site Operations**

4.17 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, the Project Arboriculturist must be consulted and the Local Planning Authority (LPA) informed. The Project Arboriculturist should evaluate any potential arboricultural impacts that could arise and specify additional tree protection 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.

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

<b>Work stage</b>	<b>Job description</b>
1	Pre-commencement site meeting
2	Installation of tree protection barriers and notices
3	Main construction phase – including relocation of protection barriers and arboricultural site monitoring
4	Removal tree protection barriers

### **Pre-Commencement Site Meetings**

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

4.20 The meeting shall be pre-arranged, and the Local Planning Authority Tree Officer shall be given five working days' written notice and invited to attend.

4.21 Required attendees:

- Site project manager
- Project arboriculturist

- Contractors (including arborist) and other relevant parties

4.22 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

4.23 The Project Arboriculturist shall provide written confirmation to the Local Planning Authority Tree Officer that the meeting has occurred and that specified matters have been addressed.

### **Installation of temporary Tree Protection Barriers and Notices**

4.24 All temporary tree protection barriers must be installed in accordance with the default BS5837:2012 specification that is shown on the draft tree protection plan.

4.25 All barriers are to be installed in locations as specified on Tree Protection Plan at Appendix 2.

4.26 All weather A3-sized notices reading, "CONSTRUCTION EXCLUSION ZONE – NO ACCESS" shall be attached to tree protection barriers (See Appendix 4) in the positions indicated on the Tree Protection Plan.

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

4.28 On completion of all construction works, the project arboriculturist shall approve 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 phase**

4.29 Induction - 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/protected trees as well as the content of the AMS. In particular the two trees protected with Tree Preservation Orders shall be brought to the attention of all site operatives. 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 3 – SITE INDUCTION FORM - TREE AWARENESS**

#### 4.30 General site rules for tree protection

- Do not independently carry out any activity that is at odds with the site Scheme of Tree Protection.
- Do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison with the Project Arboriculturist and authorisation from the LPA.
- No excavations for services, storage of materials or machinery, mixing of concrete, parking of vehicles, deposit or excavation of soil or rubble, lighting of fires or disposal of liquids shall take place within any Construction Exclusion Zone (CEZ).
- Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away (down slope where relevant) from the outer edges of root protection areas of retained trees.
- Do not fix signs, cables, lights etc. onto trees

4.31 In the unlikely occurrence that roots over 25mm diameter are uncovered the Site Manager will seek advice from the project arboriculturist.

4.32 Tree protection monitoring reports shall be supplied to the Site Project Manager and the LPA by the Project Arboriculturist.

#### **Removal of tree protection barriers**

4.33 Tree protection barriers shall remain in place until all works are completed except for final landscaping.

4.34 The Site Project Manger and Project Arboriculturist shall agree that site conditions and site operations are suitable for tree protection barriers to be removed. The Project Arboriculturist shall report circumstances to the LPA and provide five working days' notice that barriers are to be removed.

4.35 Barriers shall be removed by working from the site side of the CEZ only. General rules relating to site operations in relation to trees must still apply.

**Arboricultural site monitoring**

4.36 A summary of arboricultural site monitoring requirements is set out below:

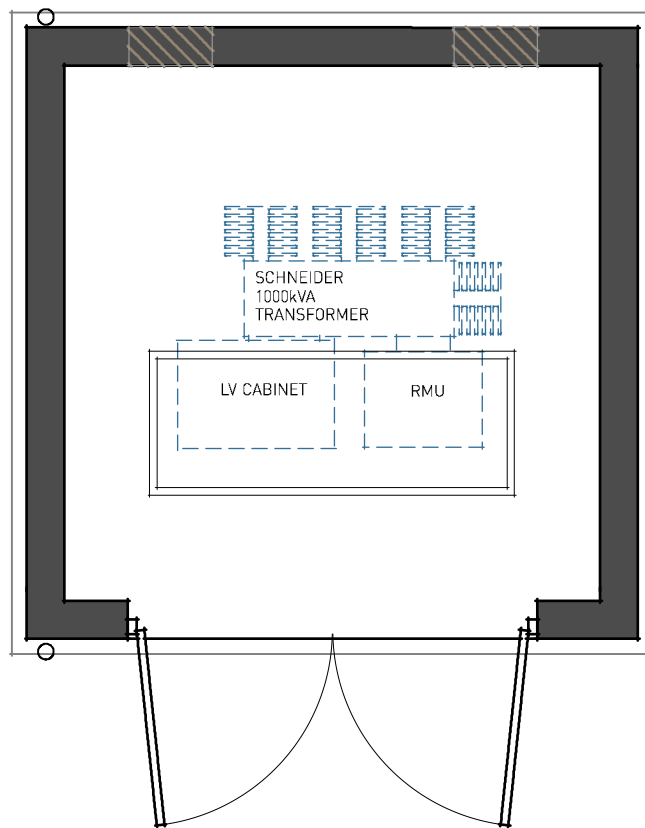
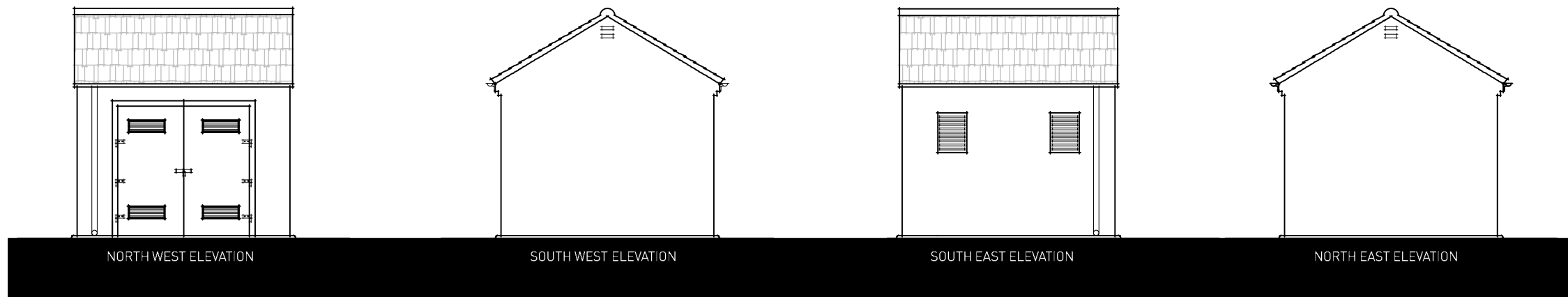
<b>Work stage</b>	<b>Job description</b>	<b>Project Arboriculturist Action</b>
1	Pre-commencement site meeting	Describe locations of tree protection barriers on site. Report to LPA that meeting has occurred.
2	Tree Protection Barriers and Notices.	Inspect location and specification of barriers. Report findings to LPA.
3	Main construction phase	Provide advice to Project Site Manager as required. Agree repositioning of tree protection fences and monitor site works within RPAs. Reports findings and recommendations to LPA.
4	Removal of tree protection barriers	Assess site conditions prior to decision to remove barriers. Give required notice to LPA.

## **APPENDIX 1**

### **SUBSTATION ELEVATIONS AND FLOOR PLAN**



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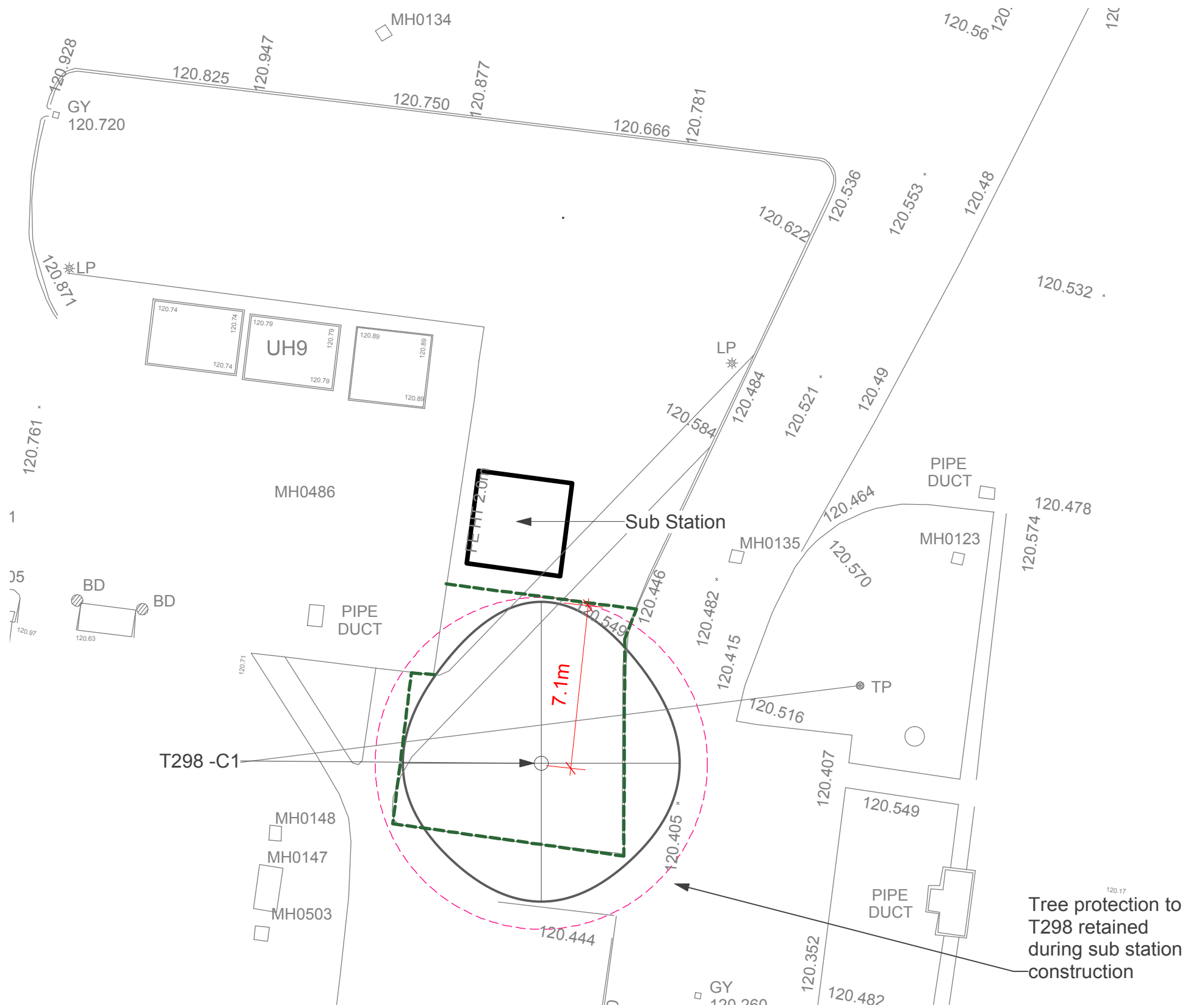


FLOOR PLAN

## HEYFORD PARK - SUB STATION ELEVATIONS & FLOOR PLANS

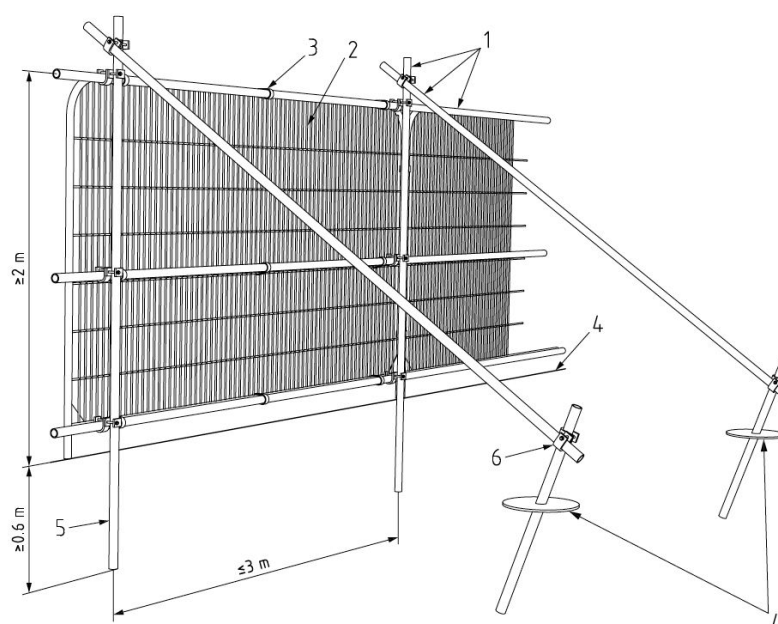
## **APPENDIX 2**

### **TREE PROTECTION PLAN**



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

- 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
  - Tree Protection Barrier to BS:5837:2012



- 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

Revisions:	Date
A • First issue	07.11.2014
B • Revised tree removals	11.11.2014

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

# Heyford Park Tree Protection Plan

Drawing Ref: **D.0341\_41-B**

Client : **Dorchester Group**

1 : 200 @ A3

Date : 07.11.14

Drawn by : PBe

Checked by : MR

**Pegasus**  
Environmental



## **APPENDIX 3**

### **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 tree Construction Exclusion Zones (CEZs). These are the areas of ground surrounding retained trees that are protected by barriers. If you need to go into a CEZ, you must first gain authorisation from the Site Manager
- No construction activity of any description within CEZs, eg soil stripping, cement mixing, services installation, storage of materials etc
- No fires within 20m of trunk of any retained tree
- If authorised to work within a CEZ, work to the **Arboricultural Method Statement**, eg demolition, construction, landscaping works etc
- If damage occurs, inform the Site Manager.

### Remember

All trees on the site are protected by planning conditions. Many trees on the site are also legally protected by Tree Preservation Order (TPO) or Conservation Area status

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.
- Wilful damage/destruction of TPO/Conservation Area trees can result in company and/or individual prosecutions - fines can be anything up to £25,000 (County Court fines can be higher). Remember that fines apply to the person committing the offence as well as the site owner and main contractors!

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

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

PRINT NAME

SIGN

DATE