



Tree Survey Report (BS5837:2012)



Proposed Gap Plant Hire, Hermitage Park, Harts Farm Way, Havant,
Hampshire, PO9 1JN

July 2017

Prepared by



Encon Associates Limited
10 Chapel Lane
Arnold
Nottingham
NG5 7DR

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Contents

Summary	4
1 Introduction	5
2 Limitations & Methodology	5
Third Party Liability	6
Subsistence Risk.....	6
Survey Methodology.....	6
3 Project Requirements & Site Overview.....	9
The Site	9
Proposed Development	9
Tree Removal	9
4 Baseline Factors	10
Tree Preservation Orders (TPO) or Conservation Area (CA) Designation	10
Existing Trees	10
Root Protection Area (RPA)	10
5 Arboricultural Implications Assessment.....	11
6 Tree Protection Measures.....	12
7 Mitigating Tree Loss	12
8 Conclusions	12
Appendix A - Schedule of Trees	14
Appendix B - Tree Survey Plan and Tree Constraints & Protection Plan	15
Appendix C - Photographic Record	16
Appendix D - Arboricultural Method Statement & Tree Protection.....	19
Appendix E – Tree Preservation Orders.....	24

Summary

The trees in this report have been assessed in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations" in connection with an application for planning consent for a new Gap Plant Hire development consisting of a new building, concrete hardstanding for lorry movement, block paved parking and tarmac access road on land at Hermitage Park, Harts Farm Way, Havant, Hampshire.

There are several existing trees within the site, all located along the northern boundary, which have been recorded in this survey. The trees are not located within a Conservation Area and none of the trees are covered by Tree Preservation Orders as confirmed by a search of Havant Borough Council's online database.

Construction of the development, including the area of hard standing to the north, does not require the removal of any trees. The existing trees are located sufficient distance beyond the site boundary to be unaffected by the concrete hardstanding storage yard and perimeter fencing and does not encroach within the Root Protection Area (RPA).

There are no category A or B trees on site. All trees recorded are either category C2, low quality trees, albeit with some visual amenity, or category U tree that are showing signs of significant and/or irreversible overall decline.

The Local Authority should rest assured that no existing trees will be impacted upon by the proposed development and the tree population can remain undisturbed and safeguarded during the construction works by following the recommended AMS, so the trees are retained unharmed to ensure the visual amenity of the shelterbelt planting is retained.

1 Introduction

1.1 The advice contained within this tree survey report has been prepared for the applicant, Gap Plant Hire, and their Agent, Bell Building Projects in respect of existing trees on land off Harts Farm Way, Hermitage Park, Havant, in proximity to the proposed redevelopment.

1.2 The report seeks to:

- Assess the quality of the trees in proximity to the proposed construction works and calculate the Root Protection Area (RPA)
- Determine if any trees are legally protected by Tree Preservation Order (TPO)
- Provide an *Arboricultural Method Statement* and *Tree Protection Plan* with regard to work within the Root Protection Area

1.3 Following the site visit, preparation of the tree survey data and discussion period with the designer, this arboricultural information is provided.

1.4 The report is based on the following drawings supplied by the client's designer:

- Existing Block Plan reference E4194_17 A001 dated 31.03.17 by BBP
- Proposed Block Plan reference E4194_17 A002 dated 31.03.17 by BBP

2 Limitations & Methodology

2.1 The survey is concerned with the arboricultural aspects of the site only. The trees on site have been surveyed and classified in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations".

2.2 The survey was undertaken using the Visual Tree Assessment (VTA) methodology to conduct a preliminary assessment of the above ground portion of the tree.

2.3 Trees are large dynamic organisms whose health and condition can change rapidly, therefore due to their changing nature and other site considerations, this report and any recommendations made are valid for the 12 month period following the site

survey which was conducted on 6 July 2017. After a period of 5 years, the information in this survey should not be relied upon.

- 2.4 The survey has been conducted in accordance with the Terms and Definitions contained in Section 3 of BS 5837:2012 ie carried out by an arboriculturalist or a competent person.

Third Party Liability

- 2.5 The limit of Encon Associates Limited indemnity over any matter arising out of this report extends only to the instructing client. Encon Associates Limited cannot be held liable for any third party claim that arises following this report.

Subsistence Risk

- 2.6 This report is primarily concerned with the condition of existing trees and applying current guidance for their retention. Any discussion on soil characteristics is only presented where this may have a direct effect on tree growth. This report does not seek to address the specific area of subsidence risk assessment or damage to existing buildings or structures.

Survey Methodology

- 2.7 The survey was undertaken from ground level with the aid of binoculars where necessary.
- 2.8 No aerial inspection nor invasive probing or drilling has been undertaken. No excavations were carried out nor soil or root samples taken.
- 2.9 The height of the tree was measured using digital Leica Disto surveying equipment.
- 2.10 The canopy spread of the trees were measured on four compass points using measuring tape.
- 2.11 The locations of the trees have been taken from the existing site plan and information provided subsequently verified during the site visit.

2.12 The information contained within the “Schedule of Trees” includes the following for each surveyed tree:

- 1 Tree reference number - cross referenced with the Tree Survey Plan drawing number A3355-01 and Tree Constraints Plan drawing number A3355-02
- 2 Species - have been given their common and botanical name where specifically known
- 3 Height - measured on site
- 4 Stem diameter - calculated by measuring the circumference at a height of 1.5m from ground level to determine the diameter
- 5 Branch spread - indicated on the tree survey plan to be representation of the overall spread of the crown in each compass direction
- 6 Height of crown clearance - given in metres above adjacent ground level
- 7 Age class - young (YNG) up to 10 years, semi-mature (SM) 1/3 life expectancy, early mature (EM) 2/3 life expectancy, mature (M) over 2/3 life expectancy, over mature (OM) declining/moribund, veteran (V) exceptionally old tree at the end of its life
- 8 Condition & Comments - good (G) sound tree needing little or no attention, fair (F) minor but rectifiable defects, poor (P) major structural and/or physiological defects that would be inappropriate to retain and/or expensive, dead (D) no longer alive or those dying and unlikely to recover. General observations on ‘physiological/structural condition’ and ‘preliminary management’ is also provided
- 9 Estimated remaining contribution - in years eg less than 10, 10-20, 20-40, over 40
- 10 Category grading - given a grade to classify the quality based on the Condition Classes and subcategories given overleaf
- 11 RPA - Protective measures as per BS 5837 which states that an area based on a radius equal to 12 times the stem diameter should be protected against damage to roots known as the “Root Protection Area” (RPA) given in m²

2.13 Category grading for the assessment of tree quality (in accordance with Table 1 "Cascade chart for tree quality assessment" within BS 5837:2012) is described below:

U Trees unsuitable for retention - Those in such a condition that they cannot be realistically be retained as living trees in the context of the current land use for longer than 10 years

A Trees of high quality - With an estimated remaining life expectancy of at least 40+ years

B Trees of moderate quality - With an estimated remaining life expectancy of at least 20-40 years

C Trees of low quality - with an estimated remaining life expectancy of at least 10-20 years, or young trees with a stem diameter below 150mm

2.14 Subcategories grading for the assessment of tree quality (in accordance with Table 1 "Cascade chart for tree quality assessment" within BS 5837:2012) is described below:

1 Mainly arboricultural qualities - Trees that are a particularly good example of their species, especially if rare or unusual

2 Mainly landscape qualities - Trees, groups or woodlands of particular visual as arboricultural and/or landscape features

3 Mainly cultural values, including conservation - Trees, groups or woodlands of significant conservation, historical, commemorative or other value eg veteran trees or wood-pasture

For full description of subcategories, refer to Table 1, page 9 of BS 5837:2012

3 Project Requirements & Site Overview

The Site

- 3.1 The application site is within land between Harts Farm Way and the A27 at Hermitage Park, Havant and includes areas of existing bare ground with a belt of existing trees beyond the northern boundary adjacent to the motorway.

Proposed Development

- 3.2 The proposed works entail the construction of a new Gap Plant Hire facility including a new building, concrete hardstanding for lorry movement, block paved parking and tarmac access road.

Tree Removal

- 3.3 Construction of the development, including the area of stone hard standing to the does not require the removal of any trees. There are no category A or B trees on site. All are either category C2, low quality trees albeit with some visual amenity, or category U showing signs of significant and/or irreversible overall decline.
- 3.4 All the trees along the northern boundary can remain undisturbed to ensure the visual amenity of the shelterbelt is retained, including the trees located off site adjacent to the A27 which will continue to provide screening of the site.
- 3.5 The exception is T8, an Ash tree in serious decline which would be inappropriate to be retained in its current condition and should be considered for removal before works commence on site.
- 3.6 The existing trees are located sufficient distance beyond the site boundary to be unaffected by the concrete hardstanding storage yard and perimeter fencing and does not encroach within the Root Protection Area (RPA).

4 Baseline Factors

Tree Preservation Orders (TPO) or Conservation Area (CA) Designation

- 4.1 The site falls within the planning jurisdiction of the Havant Borough Council and is located adjacent to the A27 motorway, to the south west of Havant within an area of existing industrial estate.
- 4.2 The trees are not located within a Conservation and none of the trees are covered by Tree Preservation Orders as confirmed by a search of Havant Borough Council's online database (see appendix for details).

Existing Trees

- 3.7 There are several existing trees and groups of trees beyond the northern boundary of the site within a shelterbelt adjacent to the A27 motorway, which have been recorded in this survey.
- 3.8 Most of the trees have been classified as grade C2, ie trees of low quality, present in groups, conferring on them greater collective landscape value rather than individual arboricultural merit. There are some very poor trees including one which has been given a U classification ie showing signs of significant and/or irreversible overall decline, which are recommended for removal. Details of the Root Protection Area (RPA) is provided on the Tree Survey Plan appended to this report.
- 4.3 A tree schedule containing full details of the survey is also attached in the appendix.

Root Protection Area (RPA)

- 4.4 The Root Protection Area (RPA) of a tree is defined in BS 5837 as the area surrounding the trunk that contains sufficient rooting volume to ensure the survival of the tree and is calculated as an area based on the stem diameter of the tree.
- 4.5 Detailed analysis of the ground conditions has not been carried out, however a visual assessment concluded that the trees appear to be growing in reasonable soils and

growing medium, albeit in some very restricted areas in proximity to paved surfacing which is likely to have influenced the morphology and disposition of the root system.

- 4.6 Tree root systems are typically concentrated within the uppermost 600mm of the soil, although it may be deeper within the dense mass of roots and soil closer to the base of the tree, particularly in more mature trees. The development of the roots is influenced by the availability of water, nutrients, oxygen and soil penetrability ie how compacted the ground is and therefore the root spread does not generally show the symmetry seen in the branch system. The trees in this survey are likely to have been influenced by proximity to surrounding structures and compacted ground conditions and proximity to the adjacent roads and hardstanding areas. Some of the trees have established into reasonable specimens whilst others are struggling due to the constraints of adjacent hard standing and of low arboricultural value. Whilst some of the trees have defects such as deadwood.

5 Arboricultural Implications Assessment

- 5.1 This section considers the implications that the proposed development will have upon the existing trees, to provide advice and solutions to any implications to ensure those trees worth of retention are safeguarded from damage during construction and once the development is operational.
- 5.2 The proposal to construct a new Gap Plant Hire facility including a new building, concrete hardstanding for lorry movement, block paved parking and tarmac access road will not impact the existing trees beyond the northern boundary of the site. All trees can be retained as part of the finished site and should be protected during the construction works using protective barrier fencing to be located as per the Tree Constraints Plan, to ensure they remain part of the overall site once the construction has been completed.

6 Tree Protection Measures

- 6.1 Construction works should follow the Arboricultural Method Statement in Appendix D at the back of this report including the erection of protective fencing to separate the existing trees from the construction works.
- 6.2 Heras fencing should be erected around the trees as shown on the Tree Constraints Plan to prevent damage to the trees from the construction work on site. See AMS for details.

7 Mitigating Tree Loss

- 7.1 No trees are proposed for removal and therefore no replacement trees are required.
- 7.2 There is one very poor tree (T8) which is in such decline and whilst its removal is not required to facilitate the development, it's removal is recommended that it should be removed.
- 7.3 It is recommended that any new tree planting proposed should be of a sufficient size and maturity to provide instant impact and recommended to be no less than "Heavy Standards", 3.5-4.25m high, 12-14cm girth with a 1.75-2.0m clear stem, located in strategic positions.

8 Conclusions

- 8.1 The trees in this report have been assessed in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations" in connection with an application for planning consent for a new Gap Plant Hire development consisting of a new building, concrete hardstanding for lorry movement, block paved parking and tarmac access road on land at Hermitage Park, Harts Farm Way, Havant, Hampshire.
- 8.2 There are several existing trees within the site, all located along the northern boundary, which have been recorded in this survey. The trees are not located within

a Conservation Area and none of the trees are covered by Tree Preservation Orders as confirmed by a search of Havant Borough Council's online database.

- 8.3 Construction of the development, including the area of hard standing to the north, does not require the removal of any trees. The existing trees are located sufficient distance beyond the site boundary to be unaffected by the concrete hardstanding storage yard and perimeter fencing and does not encroach within the Root Protection Area (RPA).
- 8.4 There are no category A or B trees on site. All trees recorded are either category C2, low quality trees, albeit with some visual amenity, or category U tree that are showing signs of significant and/or irreversible overall decline.
- 8.5 The Local Authority should rest assured that no existing trees will be impacted upon by the proposed development and the tree population can remain undisturbed and safeguarded during the construction works by following the recommended AMS, so the trees are retained unharmed to ensure the visual amenity of the shelterbelt planting is retained.

Appendix A - Schedule of Trees

Site: Harts Farm Way, Havant

Date: 6th July 2017

Weather: Warm, sunny

Ref	Species	Height (m)	Stem Diameter (mm)	Branch spread (m)				Height crown clearance (m)	Age class	Condition & Comments	Years left	Category grading	RPA (m²)	RPA radius
				N	E	S	W							
T1	Fraxinus (Ash)	15	300	6	1	0	2	7	M	Poor. Located off site beyond the western boundary on adjacent site.	<20	C2	41	3.60
T2	Acer campestre (Field Maple)	11	350	4	4	4	4	5	M	Fair. Located beyond ditch adjacent to the A27 road.	20+	C2	55	4.20
G1	Acer campestre (Field Maple)	10	200	2	2	2	2	2	M	Fair. Group of field maple with hawthorn and hazel understory	20+	C2	18	2.40
T3	Acer campestre (Field Maple)	9	300	4	4	4	4	2	M	Fair. Forks into several stems at 600m from base. Ivy.	20+	C2	41	3.60
T4	Corylus (Hazel)	7	200	4	4	4	4	0	M	Fair. Large multi-stem shrub like tree.	20	C2	18	2.40
T5	Betula (Birch)	10	200	2	2	2	2	6	M	Fair. Tall, thin tree.	20	C2	18	2.40
T6	Acer campestre (Field Maple)	12	300	5	5	4	5	3	M	Fair. Ivy growth.	20	C2	41	3.60
T7	Acer campestre (Field Maple)	12	300	5	5	4	5	3	M	Fair. Ivy growth.	20	C2	41	3.60

Site: Harts Farm Way, Havant

Date: 6th July 2017

Weather: Warm, sunny

Ref	Species	Height (m)	Stem Diameter (mm)	Branch spread (m)				Height crown clearance (m)	Age class	Condition & Comments	Years left	Category grading	RPA (m²)	RPA radius
				N	E	S	W							
T8	Fraxinus (Ash)	13	500	5	4	0	5	8	M	Poor. Severly leaning to the north. Bend in trunk at 800m above ground. Snapped branches and deadwood in crown. In serious decline.	<10	U	204	8.05
G2	Buddleia, Hazel, Sycamore & Willow	5	75	3	3	3	3	0	YNG	Fair. Group of mixed shrubs and young regenerating tree species.	20+	C2	3	0.90
G3	Birch, Hazel & Field Maple	10	200	2	2	2	2	2	M	Fair. Group of mixed deciduous trees.	20	C2	18	2.40
G4	Salix (Willow)	12	350	2	2	2	2	8	SM	Fair. Pair of large tall, thin Willows with small canopies.	20	C2	55	4.20

Appendix B - Tree Survey Plan and Tree Constraints & Protection Plan



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Notes:

Key to Tree Survey Plan

The RPA (Root Protection Area) is the zone in which the root system is believed to be concentrated, has been calculated for each tree within the site boundary. The results can be found with the Tree Report.

The branch spread of each tree is indicated by the size of the circle representing the tree.

- This drawing is based on:
- Existing Block Plan reference E4194_17 A001 dated 31.03.17 by BBP
 - Proposed Block Plan reference E4194_17 A002 dated 31.03.17 by BBP
 - Site visit by Encon Associates 06.07.17

--- Site Boundary

○ T1 RPA shown as a dashed circle around each tree with the Reference Number

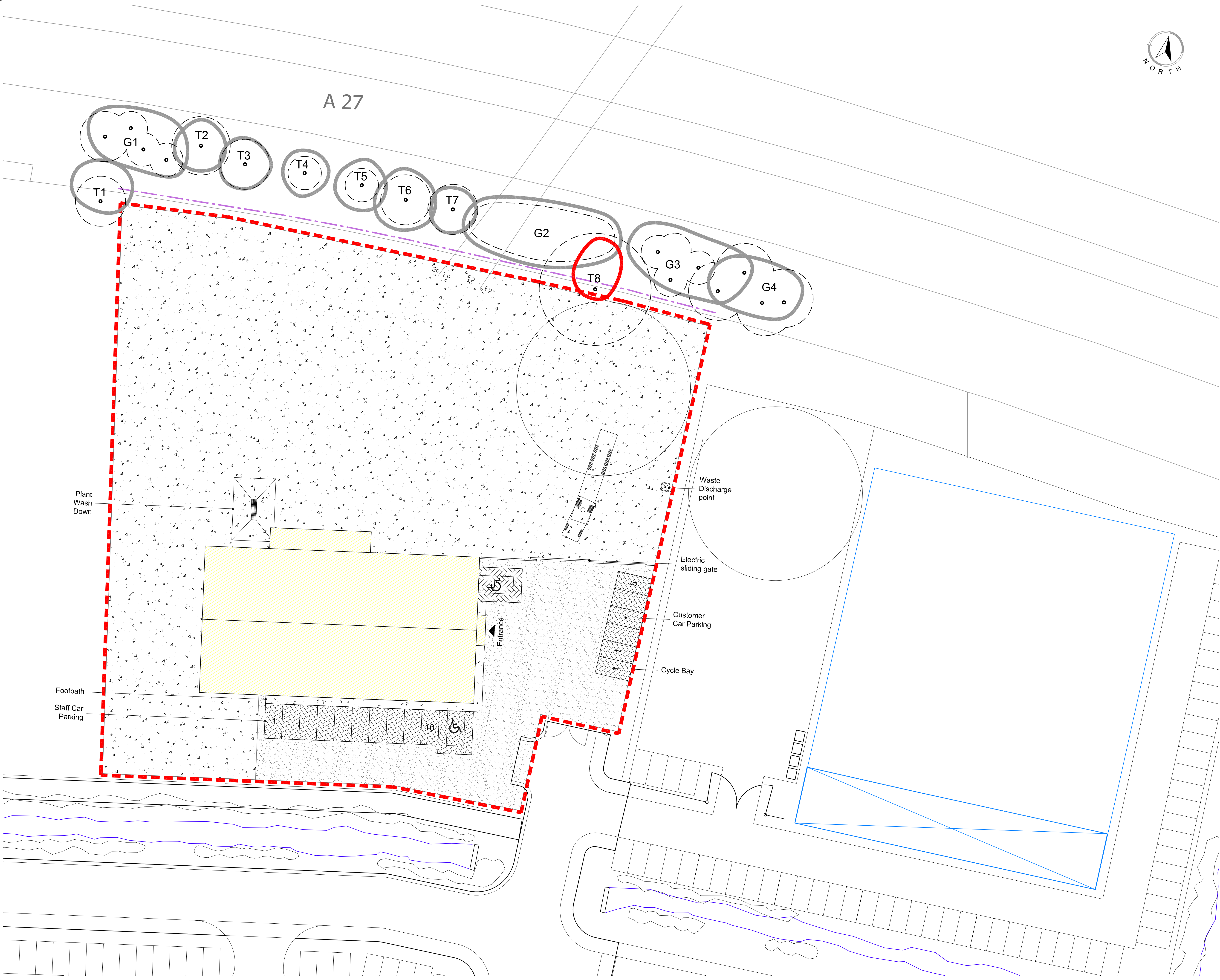
○ Class A

○ Class B

○ Class C

○ Class U

Rev	Date	Description	Drawn	Checked
Client				
Bell Building Projects				
Project				
Gap Plant Hire				
Hermitage Park, Harts Farm Way				
Havant, PO9 1JN				
Title				
Tree Location Plan				
Drawing Status				
FOR PLANNING APPROVAL				
Drawn	MJB	Checked	GM	
Date	06.07.17	Scale (A1)	1:250	
 encon associates T: 0115 987 55 99 E: enquiries@enconassociates.co.uk W: www.enconassociates.co.uk Head Office 10 Chapel Lane Nottingham NG5 7DR				
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Job Number		Drawing Number		Rev
A3355		01		



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- Site visit by Encon Associates 06.07.17

Site Boundary

RPA shown as a dashed circle around each tree with the Reference Number

Class A

Class B

Class C

Class U

Tree Protection Fencing

Rev	Date	Description	Drawn	Checked
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Client

Bell Building Projects

Project

Gap Plant Hire
Hermitage Park, Harts Farm Way
Havant, PO9 1JN

Title

Tree Constraints Plan

Drawing Status

FOR PLANNING APPROVAL

Drawn	MJB	Checked	GM
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Date	06.07.17	Scale (A1)	1:250
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■ T: 0115 987 55 99 ■ E: enquiries@enconassociates.co.uk ■ W: www.enconassociates.co.uk

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Job Number	Drawing Number	Rev
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A3355	02	
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Head Office
10 Chapel Lane
Nottingham
NG5 7DR

Appendix C - Photographic Record



Photo 1 – View of the ash tree (T1) with group of field maple (G1) located off site



Photo 2 - View of field maple (T2) beyond the northern boundary adjacent to the A27 motorway



Photo 3 - View of the birch (T5) and field maple (T6) beyond the northern boundary adjacent to the A27 motorway



Photo 4 - View of the field maple (T7) and ash (T8) beyond the northern boundary adjacent to the A27 motorway



Photo 5 – View of the buddleia, hazel, sycamore and willow shrubs and young trees (G2) under the overhead cables



Photo 6 - View of the buddleia, hazel, sycamore and willow shrubs and young trees (G2) under the overhead cables



Photo 7 - View of the poor ash (T8) with deformed lower trunk and leaning to the north which should be removed



Photo 8 - View of the birch, hazel and field maple (G3) and the tall willow trees (G4) beyond the northern boundary adjacent to the A27 motorway

Appendix D - Arboricultural Method Statement & Tree Protection

The following Arboricultural Method Statement to be read in conjunction with the Tree Constraints & Protection Plan (TCP) which identifies:

- Trees to be retained
- Trees to be protected
- Location of tree protection fencing

1.1 Root Protection Area (RPA)

The Root Protection Area (RPA) required by the current edition of BS 5837:2012 relates to the stem diameter of each tree when measured at a height of 1.5m from ground level, adjusted where necessary to account for actual rooting patterns on site. The RPAs are to be afforded protection at all times and will be protected by fencing barriers. No works will be undertaken within any RPA that causes compaction to the soil or severance of tree roots.

1.2 There is no planned construction of any building foundations within any RPA around the existing trees to be retained.

2.0 Protective Fencing

Protective fence to be erected prior to the commencement of any site works i.e. before any materials or machinery are brought on site, any construction work starts or any stripping of soil commences. The barrier needs to have signs attached stating that this is a Tree Protection Area and that no works are permitted within the barrier. The barrier may only be removed following completion of all construction works.

2.1 The fence is to be sited in accordance with the TPP. The fence must be constructed as per figure 2 in BS 5837:2012 (see detail at the end of this section) and be fit for the purpose of excluding any construction activity. A formal briefing by the site manager with regards to the contents of this method statement to be carried out prior to commencement of work on site.

3.0 Precautions in respect of Temporary Works

Temporary access to RPA's only permitted following placement of planks or geo-textile fabrics/matting that will spread the weight of vehicular loads and prevent compaction to the soil. For pedestrian movements within RPA's a single thickness scaffold board on top of a compressible layer laid onto a geotextile fabric to be used.

4.0 Access Details

Access for all construction vehicles into site to be kept away from the trees to be retained and stay outside of the RPA.

5.0 Contractors Car Parking

To be within the existing hard standing areas off site. The area designated for parking to be kept away from the existing trees.

6.0 Site Huts and Toilets

The area designated for site accommodation to be located away from the existing trees.

7.0 Storage Space

The storage of materials to be kept away from existing trees. Storage of any materials on site is not permitted within the RPA of any existing trees.

8.0 Additional Precautions

No mixing or storage of materials should take place up a slope where they may leak into a RPA.

8.1 No fires to be lit within 20 metres of any tree stem and the fire size and wind direction should be taken into account so that, no flames come within 5.0m of any foliage.

8.2 No high-sided vehicles or cranes should access the site close to any trees to be retained and should not come into contact with any branches or travel within the RPA

8.3 No notice boards, cables or other services to be attached to any tree.

8.4 Materials which may contaminate the soil should not be discharged within 10m of any tree stem.

9.0 Site Gradients

No alterations of soil levels is planned within the RPA of the protected trees.

10.0 Demolition Works

No demolition works is planned within the RPA of the protected trees.

12.0 Soft landscaping

Any new tree planting to be carried out within any RPA to be done so with consideration of the existing trees roots. Planting pits to be hand dug, and extreme caution exercised to ensure no roots are severed during digging.

12.1 The planting scheme includes suitable species, selected in consultation with the local authority, to enhance the area and consider the available rooting space, soil type, hydrology and availability of sunlight.

13.0 Use of Herbicides

To be used in strict accordance with the manufacturer's instructions and contact with any tree foliage is not permitted.

14.0 On Site Monitoring Regime

All operations to be monitored by the main contractor. The site manager shall contact the appointed specialist if there is a breach of the RPA and tree protection measures.

14.1 Use of Sub-Contractors

The main-contractor will be responsible for ensuring sub-contractors do not carry out any process or operation that is likely to adversely impact upon any tree on site and to make them fully aware of the requirements of the AMS and TPP.

15.0 Contingency Plan

Water should be readily available on site to be used to flush split materials through the soil and avoid contamination to tree roots. At the time of any spillage the main contractor needs to contact an appointed specialist for advice.

16.0 Responsibilities

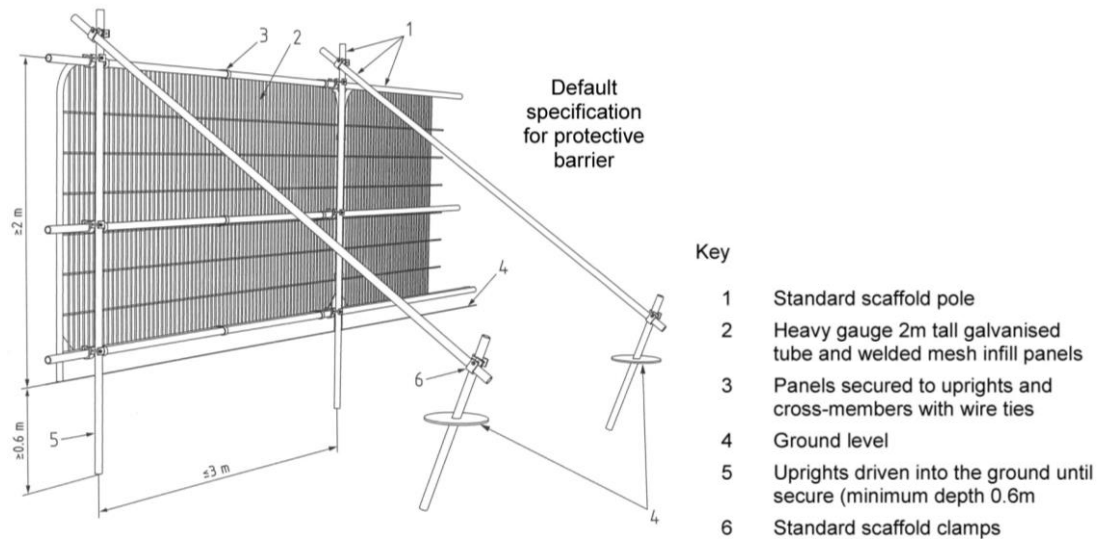
It will be the responsibility of the main contractor to ensure that the planning conditions are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site.

16.1 The main contractor will be responsible for contacting the Local Planning Authority at any time if issues are raised related to the trees on site.

16.2 If at any time pruning works are required permission must be sought from the Local Planning Authority first and then carried out in accordance with BS 3998.

16.3 The main contractor will ensure the build sequence is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position until completion of ALL construction works on the site.

16.4 Protective fencing should be erected around all trees located as per the TPP drawing as per the following:



16.5 Signs, in accordance with the following example, should be displayed to inform all personnel where the tree protection zones are and to warn them not to enter, as per this example:

TREE PROTECTION ZONE

KEEP OUT!

No digging or trenching

No storage of plant or materials

No vehicular access

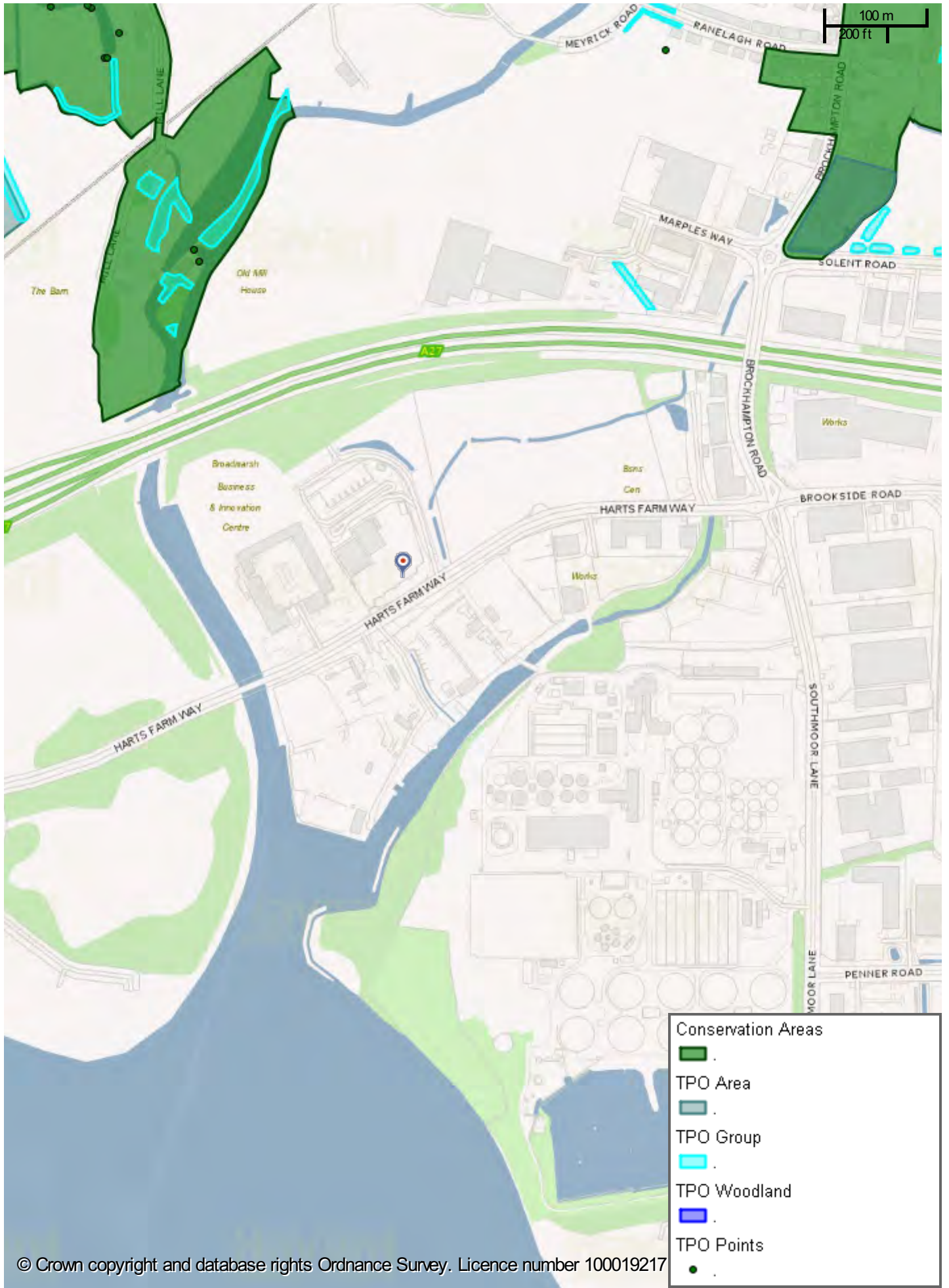
No fire lighting

No chemical handling

Avoid plant contact with tree canopy

Report any tree or fence damage to the Site Manager immediately

Appendix E - Tree Preservation Orders



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