

Site 2: Former One Stop Shop  
(previously known as Rydal Water)

Legend

- Tree Protection Fencing
- Ground Protection
- Pile and Beam
- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Tree Stem Location
- Site Boundary

Site Grid Reference: 529,189 182,739

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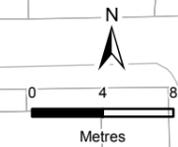
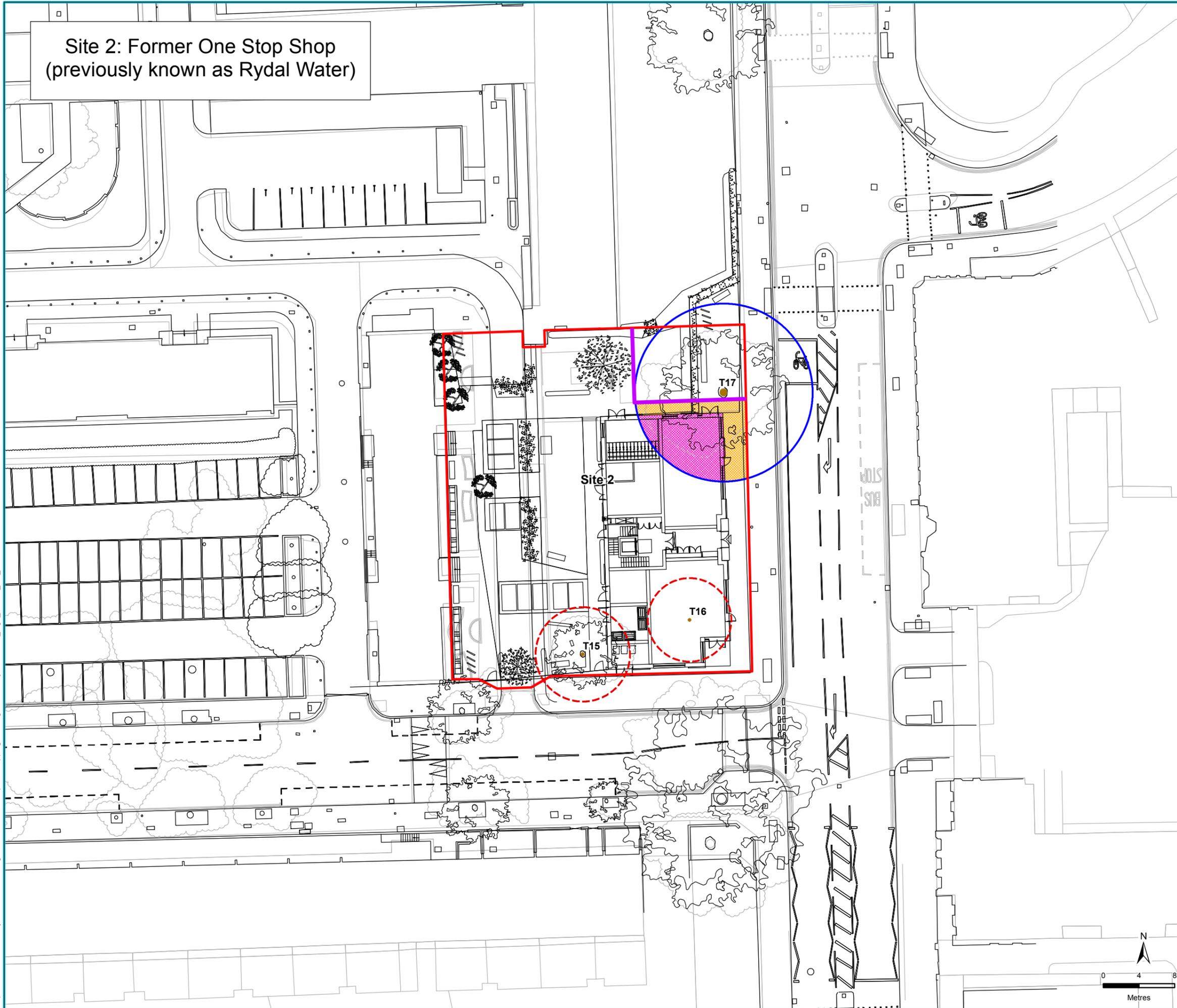
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Date 24/03/2015	Date 24/03/2015

Client  
Campbell Reith Hill LLP

Figure Number  
2b

Figure Title  
Tree Protection Plan  
(TPP01)

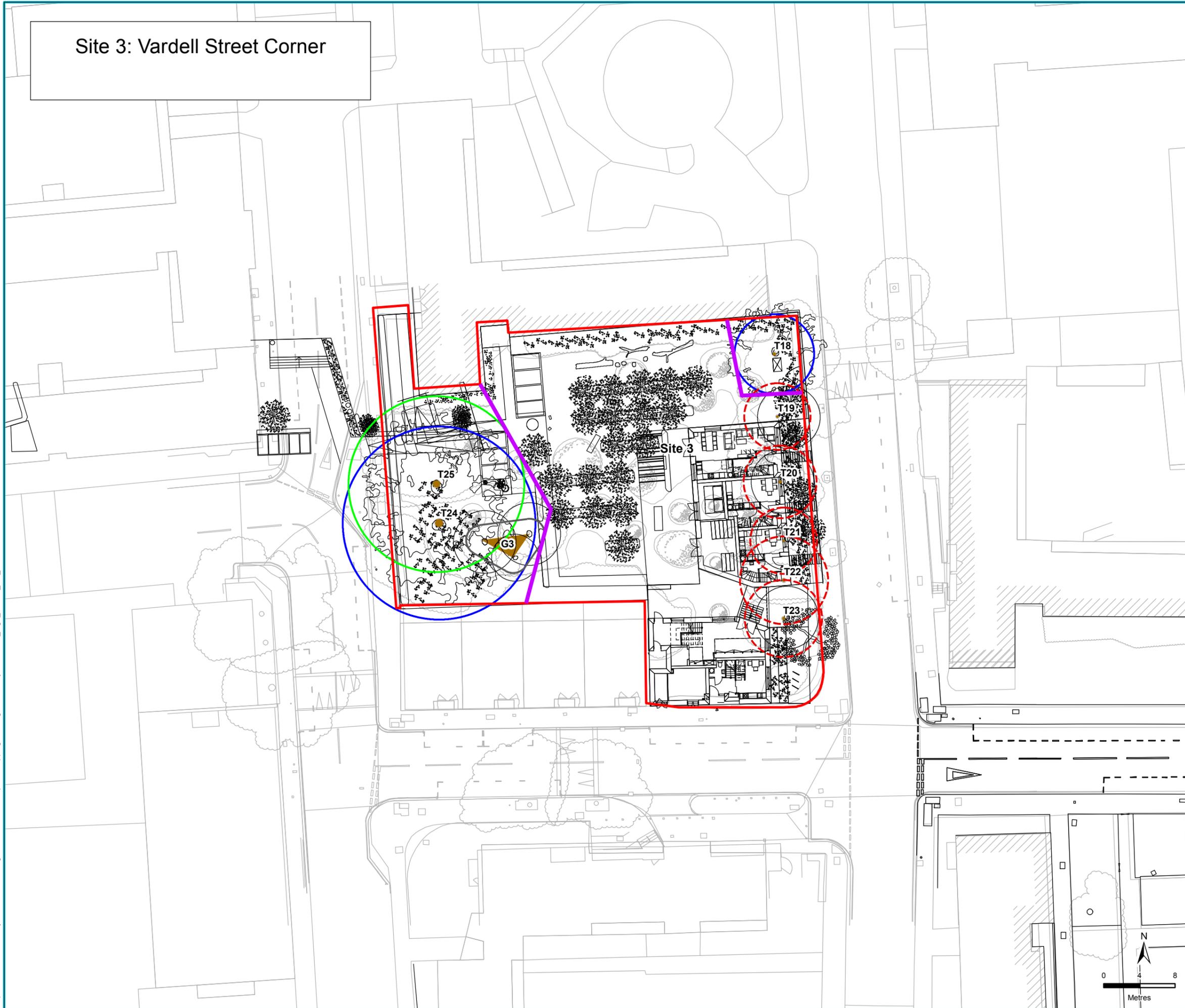
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# Site 3: Vardell Street Corner

Legend

- Tree Protection Fencing
- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Tree Stem Location
- Site Boundary



Site Grid Reference: 529.037 182.833

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**Campbell Reith Hill LLP**

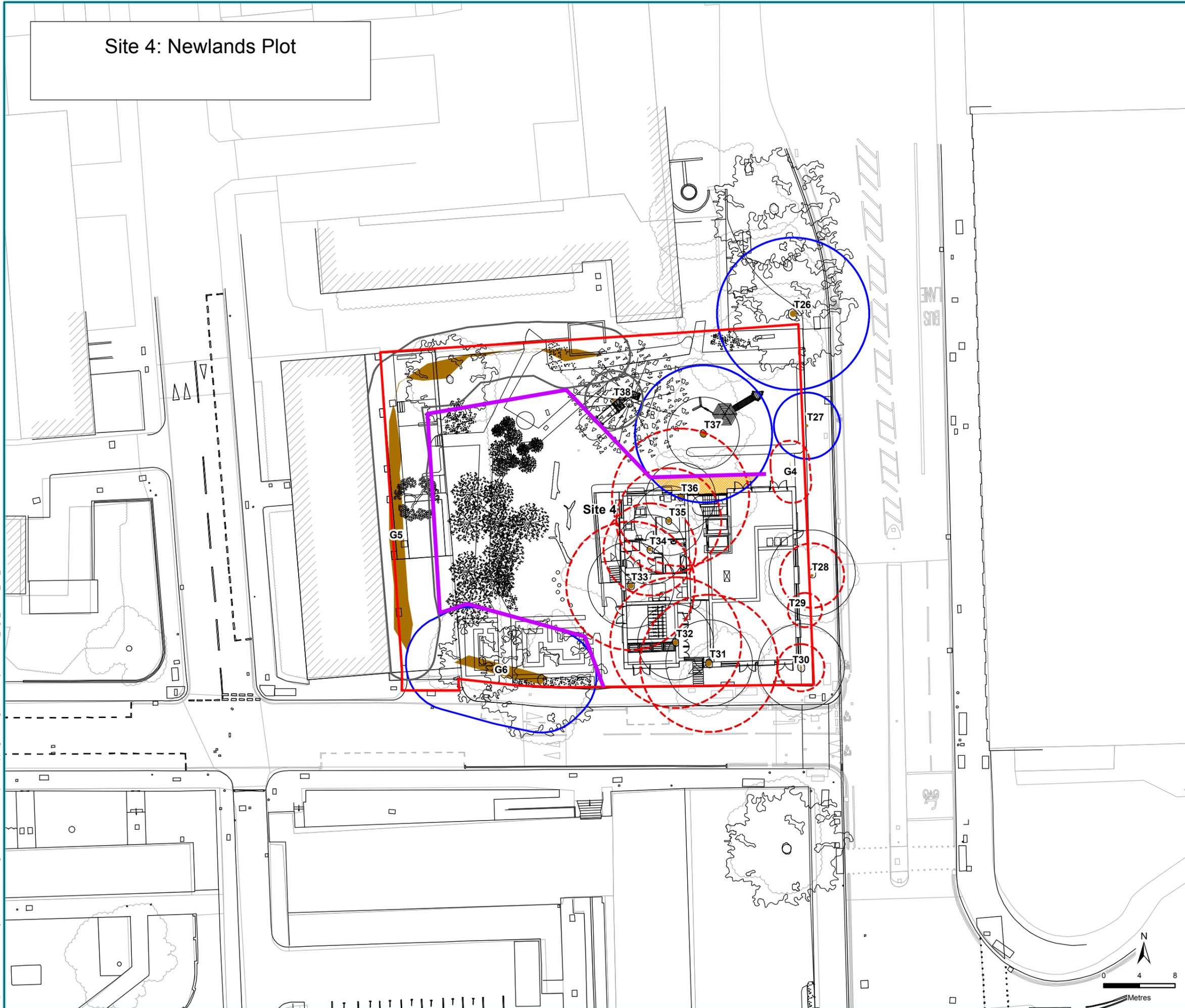
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Figure Title  
**Tree Protection Plan (TPP01)**

# Site 4: Newlands Plot

Legend

- Tree Protection Fencing
- Ground Protection
- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Tree Stem Location
- Site Boundary



Site Grid Reference: 529.180 182.830

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Date <b>24/03/2015</b>	Date <b>24/03/2015</b>
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Client  
**Campbell Reith Hill LLP**

Figure Number  
**2d**

Figure Title  
**Tree Protection Plan (TPP01)**

Site 5: Dick Collins Hall (formerly Rothay)

Legend

- Existing Fencing
- Tree Protection Fencing
- Ground Protection
- Ground Protection From Existing Hard Standing
- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Tree Stem Location
- Site Boundary

Site Grid Reference: 528,851 182,852

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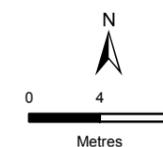
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Date 24/03/2015	Date 24/03/2015

Client  
Campbell Reith Hill LLP

Figure Number  
2e

Figure Title  
Tree Protection Plan (TPP01)



Legend

- Existing Fencing
- Tree Protection Fencing
- Ground Protection From Existing Hard Standing
- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Tree Stem Location
- Site Boundary

Site Grid Reference: 528,856 182,599

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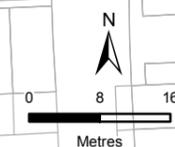
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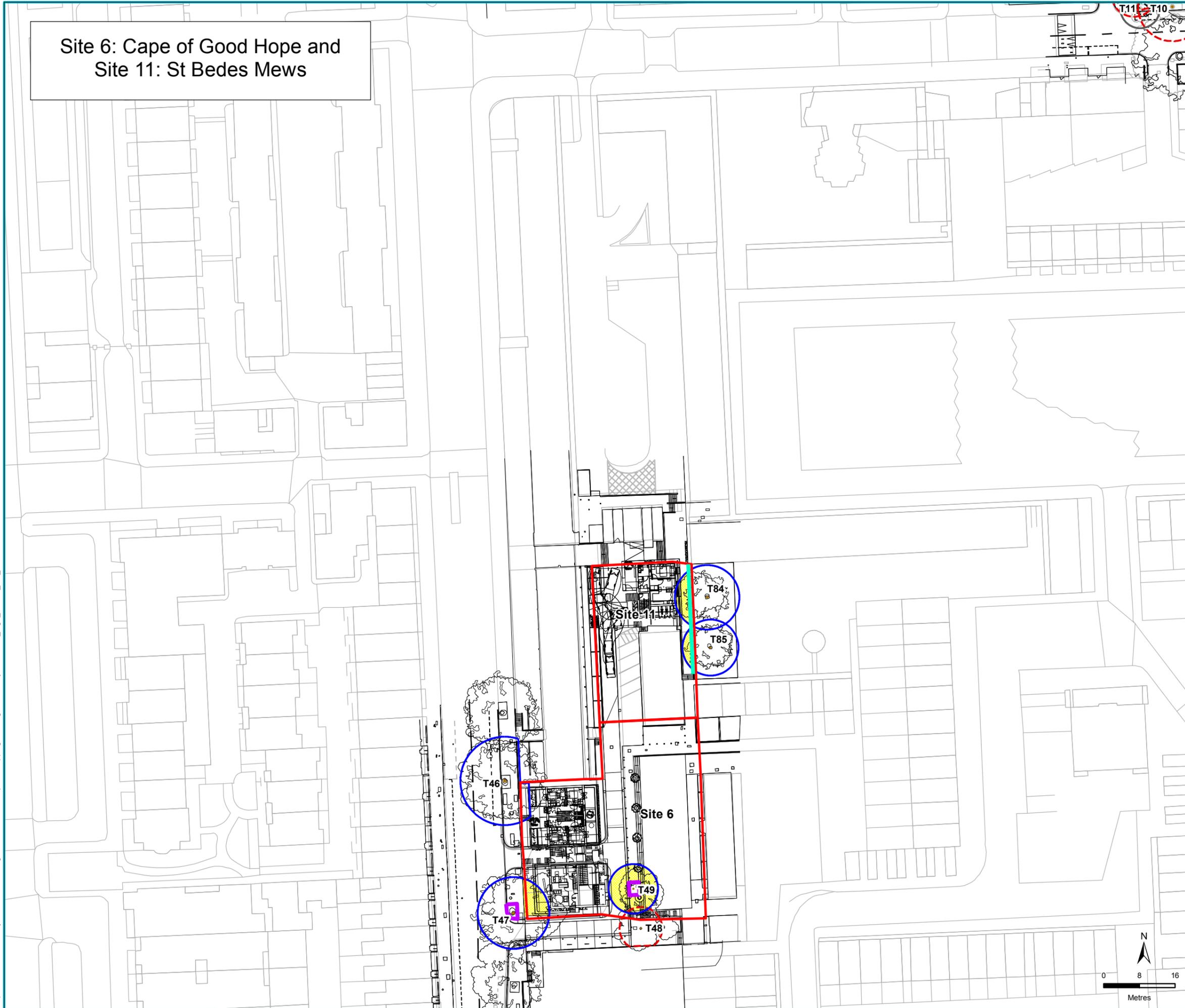
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Figure Number  
2f

Figure Title  
Tree Protection Plan  
(TPP01)



Site 6: Cape of Good Hope and  
Site 11: St Bedes Mews

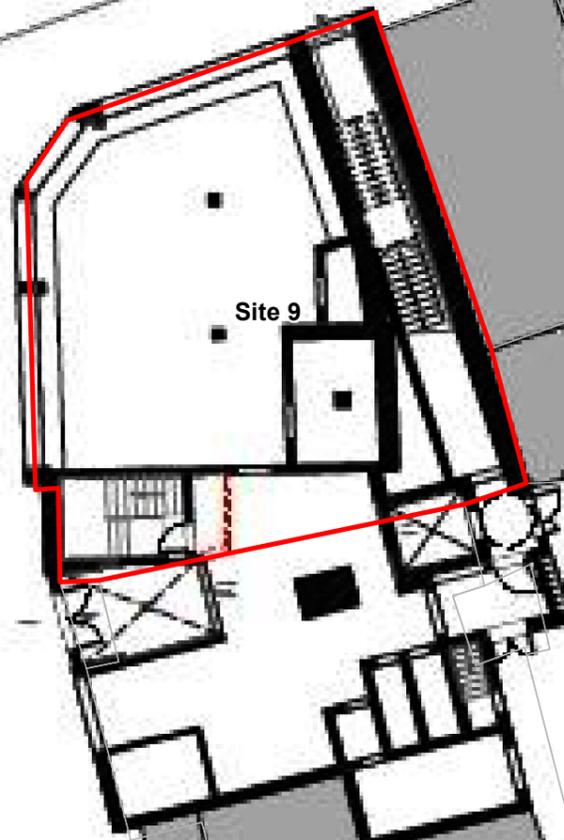


Site 9: Camden People's Theatre

Legend

- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Site Boundary

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Site 9

Site Grid Reference: 529,238 182,475

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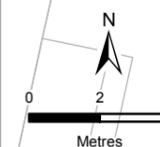
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Date 24/03/2015	Date 24/03/2015

Client  
Campbell Reith Hill LLP

Figure Number  
2g

Figure Title  
Tree Protection Plan (TPP01)



Site 10: Victory Pub

Legend

- Tree Protection Fencing
- Ground Protection From Existing Hard Standing
- Pile and Beam
- Root Protection Area of Category A Tree
- Root Protection Area of Category B Tree
- Root Protection Area of Category C Tree
- Root Protection Area of Tree to be Removed
- Tree Stem Location
- Site Boundary

Site Grid Reference: 528,839 182,784

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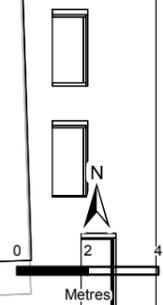
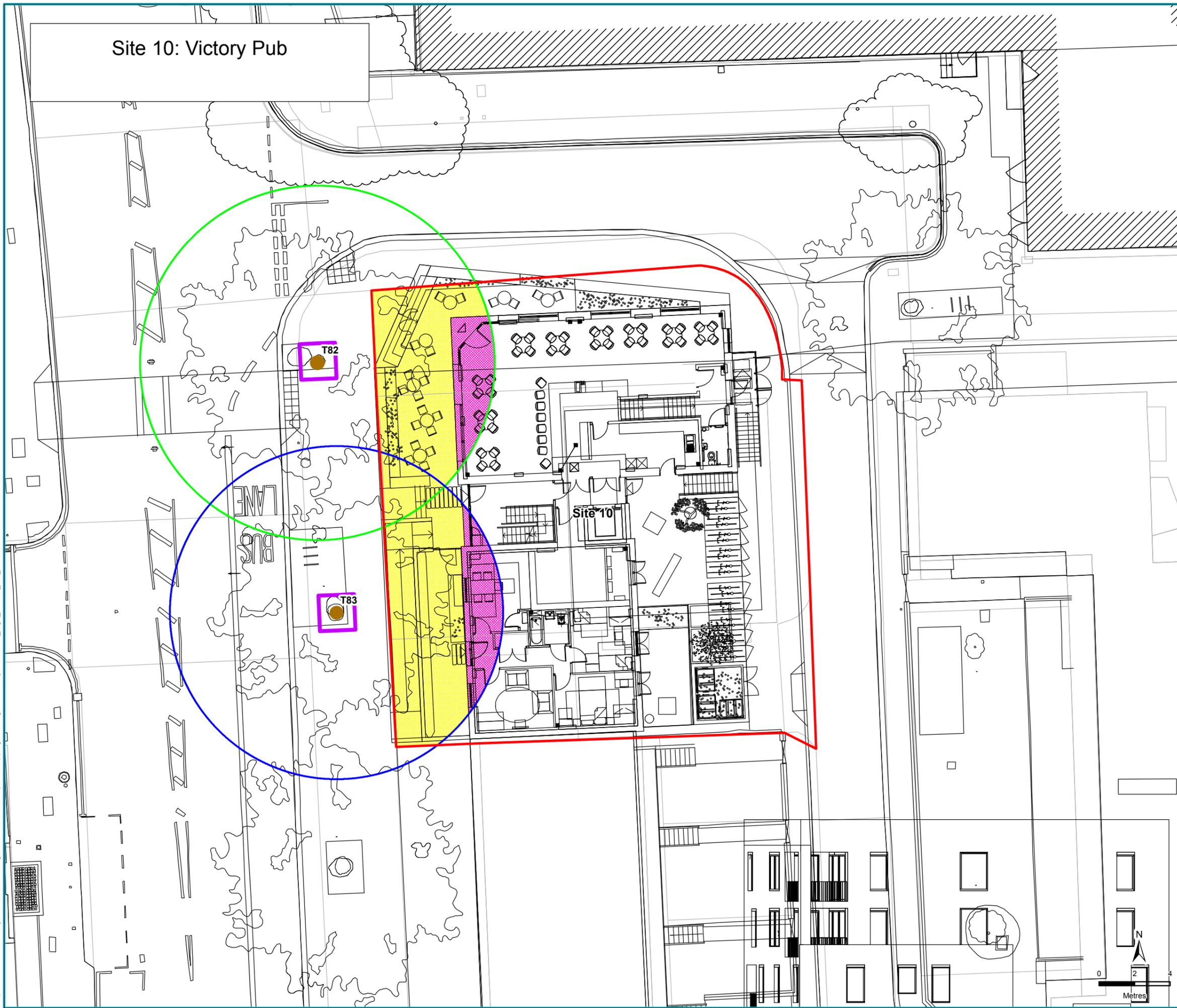
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Date 24/03/2015	Date 24/03/2015

Client  
Campbell Reith Hill LLP

Figure Number  
2h

Figure Title  
Tree Protection Plan (TPP01)



## 2. Introduction

### 2.1 Development Background

2.1.1 Eleven sites within the Regent's Park Estate were initially being considered for replacement housing for residents of residential blocks that will need to be demolished to facilitate HS2. Nine of these sites are now being taken forward for development. The proposals above are hereafter referred to collectively as 'the development'.

2.1.2 Development is proposed to be undertaken on nine distinct sites (Sites 1-9 on Figures 1) with a combined total area of approximately 1.14ha within the Regent's Park Estate area (Grid Reference TQ290828), adjacent to the A4201 road in Camden, London, see Figure 1. The areas affected by the development are hereafter referred to as the 'sites'.

2.1.3 There are a number of trees within the sites and adjacent to the site boundaries that may be affected by the development. This report will form one of the supporting planning documents.

### 2.2 Arboricultural Background

2.2.1 An arboricultural survey was undertaken of the initial 11 sites by Thomson Ecology in January 2015, the results of which can be seen in Thomson Ecology report reference: ACAM206/006/002/001. The survey was carried out in accordance with BS5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (BSI, 2012).

2.2.2 A total of 85 individual trees and seven groups were recorded during the survey across the 11 sites and are listed in the Tree Schedule (see Appendix 1). The survey recorded three Category A trees, 52 Category B trees, one Category B group, 29 Category C trees, six Category C groups and one Category U tree located within or adjacent to the site. The definitions of these categories can be seen in Appendix 2.

2.2.3 Across the nine sites being taken forward for development, 53 individual trees and six groups were recorded. This includes two Category A trees, 40 Category B trees, one Category B group, 14 Category C trees, five Category C groups and one Category U tree.

### 2.3 Brief and Objectives

2.3.1 Campbell Reith Hill LLP commissioned Thomson Ecology on 13<sup>th</sup> February 2015 to produce an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS).

2.3.2 The objective of the report was to determine the impact of the development on the trees within or immediately adjacent to the sites and to show how retained trees would be protected throughout the development stage. The brief was to:

- Provide informal design advice relating to tree issues at the nine sites being taken forward for development;
- Produce an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS) based on the proposed layouts for the nine sites combined in one report, detailing the trees to be removed and retained, and making recommendations for the tree protection measures required; and

- Produce a Tree Protection Plan.

## 2.4 Limitations

- 2.4.1 The information provided within this report and in the accompanying Tree Schedule covers only those trees that were inspected and their condition at the time of survey.

### 3. Arboricultural Impact Assessment (AIA)

#### 3.1 Introduction

3.1.1 The purpose of the AIA is to assess the likely impact of the proposed development on the existing trees on the sites and to determine which trees are to be removed or retained during the construction phase.

3.1.2 The protection of retained trees is paramount to their survival during the development process and their consequent long term contribution to the site. The Root Protection Areas (RPAs) identified in the arboricultural survey and Tree Constraints Plan (TCP) should remain protected throughout the development to avoid potential damage, such as:

- Soil compaction;
- Root severance due to excavation;
- Soil coverage with impermeable material;
- Alterations in ground level;
- Leaks and spillages from stored materials; and
- Vehicle and heavy plant collision.

#### 3.2 Documents

3.2.1 This assessment has been based on documents produced by Matthew Lloyd Architects (MLA) and Mae LLP Architects. The details of these documents can be seen in Table 1.

Table 1: Documents upon which this assessment has been based

Site	Originator	Reference No.	Title
1: Robert Street Car Park	Mae	1328-S1-101	Ground Floor Plan
2: Former One Stop Shop	MLA	RW SK15033100	Ground Floor
3: Vardell Street Corner	Mae	1328-S3-101	Ground Floor Plan
4: Newlands Plot	MLA	NL SK150402-02	Ground Plan
5: Dick Collins Hall	Mae	1328-S5-100	Site Plan
6: Cape of Good Hope	MLA	COGH SK150311	Schedule Plan

Site	Originator	Reference No.	Title
9: Camden Peoples Theatre	Mae	1328-S9-100	Proposed Site Plan
10: Victory Pub	MLA	SK150331-0	Victory GA Plans
11: St Bedes Mews	MLA	SBM SK150311-01	Plans

### 3.3 Tree Removals

3.3.1 A total of 30 trees and three groups require removal as part of this development. A breakdown of the associated categories assigned to these specimens can be seen in Table 2 and the species of tree to be removed in Table 3.

Table 2: Number of trees to be removed within each retention category

	Category A Trees and Groups	Category B Trees and Groups	Category C Trees and Groups	Category U Trees and Groups
Number of Trees and Groups	0	22	10	1

Table 3: Details of trees to be removed

Tree / Group Number	Site Number	Species	Category	Reason
T1	1	<i>Malus tschonoskii</i> ; pillar apple	C1	To facilitate the development
T2	1	<i>Pyrus calleryana</i> ; callery pear	C1	To facilitate the development
T3	1	<i>Malus tschonoskii</i> ; pillar apple	B1;2	To facilitate the development
T4	1	<i>Quercus ilex</i> ; holm oak	C1	To facilitate the development
T5	1	<i>Cedrus atlantica</i> 'Glauca'; blue Atlas cedar	B1;2	To facilitate the development

Tree / Group Number	Site Number	Species	Category	Reason
T6	1	<i>Fraxinus excelsior</i> , ash	C1;2	To facilitate the development
T7	1	<i>Acer pseudoplatanus</i> , sycamore	C1	To facilitate the development
T8	1	<i>Quercus cerris</i> , Turkey oak	C1	To facilitate the development
T10	1	<i>Platanus x hispanica</i> , London plane	B1;2	To facilitate the development
T12	1	<i>Acer platanoides</i> , Norway maple	B2	To facilitate the development
T13	1	<i>Acer platanoides</i> , Norway maple	C1	To facilitate the development
T15	2	<i>Sorbus aria</i> , whitebeam	B1;2	To facilitate the development
T16	2	<i>Salix x sepulcralis</i> 'Chrysocoma', weeping willow	U	Good arboricultural practice and to facilitate the development
T19	3	<i>Sorbus aria</i> , whitebeam	B1;2	To facilitate the development
T20	3	<i>Sorbus aria</i> , whitebeam	C1;2	To facilitate the development
T21	3	<i>Sorbus aria</i> , whitebeam	B1;2	To facilitate the development
T22	3	<i>Sorbus aria</i> , whitebeam	B1;2	To facilitate the development
T23	3	<i>Sorbus aria</i> , whitebeam	B1;2	To facilitate the development
T28	4	<i>Acer platanoides</i> , Norway maple	B1;2	To facilitate the development
T29	4	<i>Prunus serrulata</i> , Japanese cherry	C1	To facilitate the development
T30	4	<i>Pterocarya fraxinifolia</i> , caucasian wingnut	B1;2	To facilitate the development

Tree / Group Number	Site Number	Species	Category	Reason
T31	4	<i>Populus x canadensis</i> ; hybrid black poplar	B2	To facilitate the development
T32	4	<i>Populus x canadensis</i> ; hybrid black poplar	B2	To facilitate the development
T33	4	<i>Populus x canadensis</i> ; hybrid black poplar	B2	To facilitate the development
T34	4	<i>Populus x canadensis</i> ; hybrid black poplar	C2	To facilitate the development
T35	4	<i>Populus x canadensis</i> ; hybrid black poplar	B2	To facilitate the development
T36	4	<i>Populus canescens</i> ; grey poplar	B2	To facilitate the development
T39	5	<i>Platanus x hispanica</i> ; London plane	B1;2	To facilitate the development
T40	5	<i>Platanus x hispanica</i> ; London plane	B1;2	To facilitate the development
T48	6	<i>Tilia x europea</i> ; common lime	B1;2	To facilitate the development
G1	1	<i>Quercus ilex</i> ; holm oak; <i>Acer campestre</i> ; field maple	C1	To facilitate the development
G2	1	<i>Prunus avium</i> ; wild cherry; <i>Fraxinus excelsior</i> ; ash	C1	To facilitate the development
G4	4	<i>Prunus padus</i> ; bird cherry; <i>Prunus serrulata</i> ; Japanese cherry	C1	To facilitate the development

**3.3.2** The proposals avoid the loss of any Category A trees and include the removal of 14 Category C or U features whose loss should not have a significant detrimental effect of the arboricultural value of the sites. The loss of the Category B trees should be offset by suitable compensatory planting (see Section 3.9).

### 3.4 Trees to be Retained

**3.4.1** Of those surveyed across the nine sites being development, 23 trees and three groups are to be retained and protected throughout development. This includes two Category A trees, 18 Category B trees, one Category B group, three Category C trees and two Category C groups.

3.4.2 The RPAs of the retained trees should be protected by fencing to the specification laid out in BS5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*'. The specification of this fencing is detailed in Section 4.6.1 of the AMS. The area protected by the fencing shall be known as the Construction Exclusion Zone (CEZ).

### Shading

3.4.3 Although the development is of a residential nature, the orientation of the new buildings in relation to the retained trees should mean that there are few issues arising from the shade cast by the retained trees. However, it may be necessary to undertake pruning to T17 on site 2 (Former One Stop Shop, see Figure 2b) and T82 adjacent to site 10 (Victory Pub, see Figure 2h) to prevent their crown's coming into contact with the development in the future.

## 3.5 Tree Works

3.5.1 Prior to the erection of protective fencing, there are four trees and one group requiring maintenance or pruning work. Thinning works are also proposed for two of the groups to be retained. All tree work is to be undertaken in accordance with the British Standard BS3998:2010 "Recommendations for Tree Work (BSI, 2010)". Full details of all trees requiring work are given in Table 4.

Table 4: Schedule of tree works for on site trees

Tree No.	Species	Works	Category	Reason
T17	<i>Salix x sepulcralis</i> 'Chrysocoma'; weeping willow	Pollard to framework	B1;2	To facilitate the development
T24	<i>Platanus x hispanica</i> ; London plane	Determine extent of cavity	B1;2	Good arboricultural practice
T61	<i>Platanus x hispanica</i> ; London plane	Determine extent of cavity	B1;2	Good arboricultural practice
T77	<i>Betula pubescens</i> ; downy birch	Remove deadwood from crown	C1;2	Good arboricultural practice
G3	<i>Sorbus aucuparia</i> ; rowan; <i>Prunus avium</i> ; wild cherry; <i>Acer pseudoplatanus</i> ; sycamore	Fell dead cherry and sycamore	C1	Good arboricultural practice and to facilitate the development

Tree No.	Species	Works	Category	Reason
G5	<i>Populus tremula</i> ; aspen; <i>Sambucus nigra</i> ; elder; <i>Prunus padus</i> ; bird cherry; <i>Liquidambar styraciflua</i> ; sweet gum; <i>Cornus sanguinea</i> ; common dogwood	Remove all trees and shrubs apart from aspen	C1;2	To facilitate landscape enhancements to the site

**3.5.2** The works proposed for T17 are being undertaken in an attempt to allow its retention due to its contribution to the amenity value of the local landscape. However, following the development it will be in close proximity to an entrance to the new building in site 2 (see Figure 2b) and regular repollarding will be required to prevent it causing access issues. It may also be necessary to remove T17 if it is significantly adversely affected during the construction phase. If this is the case compensatory planting should be undertaken (see Section 3.9).

### 3.6 Construction Work within RPAs

**3.6.1** The development encroaches into the RPAs of trees at site 1 (Robert Street Car Park), 2 (Former One Stop Shop), 4 (Newlands Plot), 10 (Victory Pub) and 11 (St Bedes Mews). The trees affected are T11, T17, T37, T82, T83 and T84, respectively (see Figure 2a, b, d, h and f).

#### Site 1: Robert Street Car Park

**3.6.2** The new building within site 1 encroaches into the RPA of T11 covering 4.8% of the total RPA (see Figure 2a). T11 is an off-site London plan (*Platanus x hispanica*) in good physiological condition. As the adjacent dominant T10 is proposed for removal and T11 is in good condition this minor encroachment should not have a significant detrimental effect on its long-term health.

#### Site 2: Former One Stop Shop

**3.6.3** The new building within site 2 encroaches into the RPA of T17 covering 17.4% of the total RPA (see Figure 2b). T17 is a mature weeping willow (*Salix x sepulcralis 'Chrysocoma'*), which also requires pollarding to accommodate the development. Although the encroachment is less than 20% of the RPA, special construction techniques such as pile and beam or cantilever foundations should be utilised to prevent the excavation work required within the RPA having a significant detrimental effect on the long-term health of the tree.

#### Site 4: Newlands Plot

**3.6.4** The new building within site 4 encroaches into the RPA of T37 covering 4.9% of the total RPA (see Figure 2d). T37 is a hybrid black poplar (*Populus x canadensis*) with a history of pollarding. The stem of another tree, T36, is also currently located in the area where the encroachment occurs, meaning that it is unlikely that a significant level of roots from T37 are present in that section of the RPA. Owing to this, and the minor nature of the encroachment, it should not have a significant detrimental effect on the long-term health of the tree.

*Site 10: Victory Pub*

- 3.6.5** The new building within site 10 encroaches into the RPAs of T82 and T83 covering 4.9% and 6.4% of their total RPAs, respectively (see Figure 2h). Both of these trees are off-site London plane street trees in good physiological condition and the encroachment occurs in an area currently covered by a hard standing pub patio.
- 3.6.6** It is recommended that some exploratory hand or air spade excavation is undertaken to determine the level of roots from the trees present in the area where the encroachments occur. If roots are present it will be necessary to utilise pile and beam foundations to prevent a significant detrimental effect on the long-term health of the trees.

*Site 11: St Bedes Mews*

- 3.6.7** The new building within site 11 encroaches into the RPA of T84 covering 4.7% of the total RPA (see Figure 2f). T84 is an off-site hornbeam (*Carpinus betulus*) in good physiological condition. Due to the presence of root barriers in the area where the encroachment occurs there should be no roots present in the area and it should therefore not have a significant detrimental effect on the long-term health of the tree.

**3.7 Services and Utilities**

- 3.7.1** Detailed drawings of underground services are not available at this time. Therefore it is not possible to identify any specific potential impacts associated with services at the sites at this stage. However, due to the locations of the retained trees and the proximity of the sites to existing services buildings and roads, it should be possible for new services to enter each site without affecting the RPAs of the retained trees.
- 3.7.2** Where existing services situated within RPAs require upgrading, the care must be taken to minimise any disturbance, and where feasible trenchless techniques are to be employed, and only where necessary should manual excavation be considered.
- 3.7.3** If new services are to be introduced into the site they should be located outside of the RPAs where they will not interfere with tree roots. Final positions of any proposed services should be verified and approved by an arboricultural consultant and the Local Authority Tree Officer before implementation.
- 3.7.4** If service installation is required within RPAs then the guidelines within National Joint Utilities Group publication (NJUG 4) should be adhered to.

**3.8 Post Development Management**

- 3.8.1** Although there will be a change in use of each of the sites, they are all currently managed by London Borough of Camden and should therefore be subject to their own tree management programme and should therefore not require a change in the current level of management. If any of sites go into to private ownership, guidance on the level of tree management required can be found in the National Tree Safety Group publication, 'Common sense risk management of trees' (NTSG, 2011).

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### 3.9 New Planting

**3.9.1** The current plans indicate up to 40 new trees will be planted as part of the final landscaping scheme (see Figure 2a-h). Given the space available, this should be a sufficient level of new planting to offset the proposed losses and also enhance the street scene.

**3.9.2** If the retention of T17 within site 2 is not possible, a suitably sized replacement of the same species (weeping willow) should be planted in a prominent position on site, visible from the surrounding public land.

### 3.10 Conclusion

**3.10.1** The development will result in the removal of 30 trees and three groups from the site. However, all Category A trees will be retained and 14 Category C or U features are among those to be lost. Compensatory planting is included in the landscaping proposals.

**3.10.2** There should be no harm caused to any trees planned for retention by these proposals subject to the erection of protective fencing and the creation of a Construction Exclusion Zone.

**3.10.3** Once detailed finalised drawings for the underground services have been produced, they should be reviewed by an arboricultural consultant prior to approval by the Local Planning Authority Tree Officer.

## 4. Arboricultural Method Statement (AMS)

### 4.1 Introduction

4.1.1 The purpose of this AMS is to demonstrate how work will be undertaken on the site to avoid an unacceptable impact on, and provide an adequate level of protection for, the retained trees.

4.1.2 This AMS sets out the tree protection required to facilitate the proposed development, and should not be read as a definitive engineering or construction statement for this site. Matters relating to construction or engineering detail should be referred to a qualified structural engineer for further information and specification.

4.1.3 This AMS is to be used in conjunction with the Tree Protection Plan (TPP01) in Figure 2a - h.

### 4.2 Documents

4.2.1 This AMS has been based on documents produced by Matthew Lloyd Architects (MLA) and Mae LLP Architects. The details of these documents can be seen in Table 5.

Table 5: Documents upon which this assessment has been based

Site	Originator	Reference No.	Title
1: Robert Street Car Park	Mae	1328-S1-101	Ground Floor Plan
2: Former One Stop Shop	MLA	RW SK15033100	Ground Floor
3: Vardell Street Corner	Mae	1328-S3-101	Ground Floor Plan
4: Newlands Plot	MLA	NL SK150402-02	Ground Plan
5: Dick Collins Hall	Mae	1328-S5-100	Site Plan
6: Cape of Good Hope	MLA	COGH SK150311	Schedule Plan
9: Camden Peoples Theatre	Mae	1328-S9-100	Proposed Site Plan
10: Victory Pub	MLA	SK150331-0	Victory GA Plans
11: St Bedes Mews	MLA	SBM SK150311-01	Plans

**4.2.2** The relationship between the trees and the proposed development are shown on the Tree Protection Plan (see Figure 2a-h) which is based on the Tree Constraints Plan (TCP01 within Thomson Ecology report ref: ACAM206/006/002/001) and the drawings detailed in Table 5.

**4.3 Supervision**

**4.3.1** Before construction commences, a suitably qualified and experienced arboriculturist shall be appointed to oversee key stages of the construction work that will affect the retained trees, as laid out in Table 7.

**4.3.2** Any changes to the nature and sequence of works specified in this AMS regarding the retained trees should be agreed with an arboricultural consultant at least 48 hours before their implementation.

**4.4 List of Contacts**

**4.4.1** The list of contacts within Table 6 should be used as reference if any deviations from, or issues with, any part of this AMS arise.

Table 6: List of contact details

Name	Job Title	Organisation	Contact Email	Contact Number
Sam Lowe	Head of Arboriculture	Thomson Ecology	Sam.lowe@thomsonecology.com	01483 466 000
Kelly King	Arboricultural Officer	London Borough of Camden	Kelly.king@camden.gov.uk	02079741591
TBC	Site Manager	-	-	-
Claire Warnock	Architect	MLA	Claire.warnock@matthewlloyd.co.uk	-
James Halsall	Architect	Mae	j.halsall@mae-llp.co.uk	-

**4.5 Tree Removals and Pruning**

**4.5.1** Tree removal and pruning will be undertaken as detailed in Table 3 and 4 of the AIA, respectively. The stumps of the felled trees shall be left in place or ground out to below ground level. Trees requiring pruning shall have the works carried out in accordance with BS3998:2010 'Recommendations for Tree Work'.

**4.5.2** Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber lorries, tractors, excavators or cranes should be parked or driven beneath the crowns of any retained trees, to prevent subsequent soil compaction and root death. All arisings are to be removed and the site is to be left in as tidy and orderly manner as possible.

## 4.6 Protective Fencing

4.6.1 Temporary fencing will be erected as indicated on the Tree Protection Plan (TPP01) in Figure 2a-h. The specification for this fencing will be in accordance with the recommendations given in BS5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (BSI, 2012). It will comprise 2.0m high mesh fencing (Heras type panels are a simple, readily available solution) attached to a scaffold framework. Support scaffolds will be attached to the scaffold framework as necessary at an angle of 45 degrees on the side of the trees and anchored by further scaffold poles carefully firmed into the ground. The vertical scaffold tubes will be spaced at a maximum interval of 3m. Clear signs will be attached at 6m intervals along the fencing stating 'Construction Exclusion Zone – No Access'. A diagram illustrating an example of the protective fencing can be seen in Appendix 4.

4.6.2 The area protected by the fence shall be known as the Construction Exclusion Zone (CEZ). The following principles must be maintained within the CEZ:

- Existing ground levels shall not be altered;
- No excavation shall occur to avoid root severance;
- No plant or vehicles shall enter the CEZ;
- Impermeable surfacing shall not be laid down over soil ('capping');
- No materials, fuels or chemicals shall be stored within any of these areas;
- No fires to be lit where flames may reach within 5m of the CEZ;
- No structures or fixtures of any kind shall be fastened in any way to the trunks of the retained trees;
- No drainage or irrigation pipes shall be installed within the RPAs of the retained trees; and
- Any unwanted vegetation shall be removed by hand.

4.6.3 The fencing shall remain in place until soft landscape operations require its full or partial removal. No other construction activity will take place within those areas formerly protected by the fence.

## 4.7 Ground Protection

4.7.1 Ground protection will be utilised on site 1, 2, 4, 5, 6, 10 and 11. On site 2, 4 and 5 (see Figure 2b, d and e) the ground protection will be in the form of a single thickness of scaffold boards, laid on top of a layer of a compressible substrate (such as woodchip), on top of a geotextile as specified in Section 9.3 of the BS5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*'. Timber scaffold boards shall be secured to each other to prevent them moving apart. This is the case for T17, T37 and T41.

4.7.2 On site 1, 6, 10 and 11 (see Figure 2a, h and f) the ground protection will be in the form of existing hard standing. This is the case for T1, T9, T47, T49, T82, T83, T84 and T85.

## 4.8 Removal of Hard Surfaces within the RPA

4.8.1 It may be necessary to remove hard standing from within the RPAs of T11, T47, T82 and T83 within site 1, 6 and 10, respectively (see Figure 2a, f and h). To prevent damage to any

underlying roots this will be removed by hand where possible. Machinery can be used if necessary to break up and remove larger or more substantial sections of the surface. However, the machinery should be footed outside of the RPA or on sections of the surface not yet removed.

#### 4.9 Construction within RPAs

4.9.1 As detailed in Section 3.6 of the AIA, encroachments into the RPAs of T11, T17, T37, T82, T83 and T84 occur on site 1 (Robert Street Car Park), 2 (Former One Stop Shop), 4 (Newlands Plot), 10 (Victory Pub) and 11 (St Bedes Mews), respectively (see Figure 2a, b, d, h and f). Special construction techniques will be used to mitigate root damage on site 2 and 10.

##### *Site 2: Former One Stop Shop*

4.9.2 Where the footprint of the new building encroaches into the RPA of T17 (see Figure 2b) pile and beam foundations will be utilised to mitigate the root damage associated with traditional construction techniques.

4.9.3 Exploratory bore holes shall be hand-dug to a depth of 1m to ensure there are no major roots present. If roots of over a diameter of 25mm are encountered the hole shall be back-filled with the excavated material and a new exploratory hole dug. Roots under a diameter of 25mm may be pruned using a pruning saw or secateurs leaving a clean-cut surface and to a lateral root where possible, under the supervision of an arboriculturist. The ground beam will be located at or above the existing ground level (following the removal of existing vegetation).

##### *Site 10: Victory Pub*

4.9.4 Where the footprint of the new building encroaches into the RPAs of T82 and T83 (see Figure 2h) exploratory hand and air spade excavation will be undertaken under the existing hard standing. This will be undertaken under the supervision of an arboriculturist. If no roots from the two trees are discovered, traditional foundation construction techniques will be utilised in this area. However, if roots are found, the same approach detailed in Section 4.9.3.

4.9.5 New hard standing surfacing may also be required in this area (see Figure 2h). If, following the removal of the existing hard standing, it is possible to utilise the existing sub-base material it will be retained a new porous surface material will be laid on top to allow air and water to reach the underlying rooting environment. However, if it is not possible to retain the underlying sub-base material, new 'no-dig' surfacing in line with specification detailed in Arboricultural Practice Note 12: '*Through the trees to development*' will be utilised.

4.9.6 A proprietary cellular-confinement system (e.g. cell-webbing) will be laid onto a geotextile membrane. This will be positioned on top of the existing ground level (following the removal of the existing hard standing and sub-base material) and edges of will be securely boarded and staked to prevent the spread of the 'no-fines' infill substrate, and finally topped with a permeable surface layer tarmac. An illustrative example of this can be seen in Appendix 4.

4.9.7 The depth of the cell-webbing used will be dependent on the likely loading expected after installation. However, a depth of 75-100mm should be sufficient to reduce soil compaction from the pedestrian transit intended to use the area. The company Geosynthetics supply a cellular-confinement system (called CellWeb™ TRP) in the UK that would be suitable for this use.

#### 4.10 Services and Utilities

4.10.1 All underground services and drainage routes shall be located so that no excavations are required within the RPAs of the retained trees. In the event that an incursion into an RPA is unavoidable, the installation shall comply with the methods and guidelines detailed in “*Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees*” NJUG 4 (2007). If this does occur, then an arboricultural consultant shall be consulted before any works commence within the RPA to agree the methodology for the excavation.

#### 4.11 Landscaping

4.11.1 The plans provided do not show any significant landscaping within the RPAs of the retained trees. However, if any is to be undertaken post-construction the principles of the CEZ (as detailed in Section 4.6.2) should still be adhered to with particular reference to level changes, root severance and ‘capping’ with impermeable materials. If impermeable surfaces are to be laid within the RPA of any of the retained trees then they will not cover greater than 20% of the area.

4.11.2 It is suggested that an area of mulch be added to the base of the trees should any soft landscaping take place. An area of 1m<sup>2</sup> and 5-10cm depth of shredded bark, bark chips or well-composted green waste to conform to PAS 100 (BSI, 2005b) is suggested. Mulch should not be spread so that it is piled against the base of the tree.

#### 4.12 Sequence of Works

4.12.1 A logical sequence of events is to be observed as show in Table 7.

Table 7: Sequence of works

Stage	Event	Arboricultural Supervision required
Stage 1	Carry out tree removals and works specified in Table 3 and 4, respectively.	No
Stage 2	Install protective fencing and ground protection in the positions shown on Figure 2a-h.	No
Stage 3	Undertake exploratory work within the RPAs of T82 and T83 at site 10.	Yes
Stage 4	Install pile foundations within RPAs of T82 and T83 at site 10, if appropriate.	Yes
Stage 5	Install pile foundations within RPA of T17 at site 2.	Yes

Stage	Event	Arboricultural Supervision required
Stage 6	Complete main construction phase of development.	No
Stage 7	Complete all landscaping.	No
Stage 8	Removal of all machinery from site.	No
Stage 9	Dismantle protective fencing by hand and remove from site.	No

## 5. References

- 5.1.1 British Standards Institution (2012) BS5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations. BSI, London.
- 5.1.2 British Standards Institution (2010) BS3998:2010 *Recommendations for tree work*. BSI, London.
- 5.1.3 British Standards Institution (2005b) *Publicly Available Specification 100 (PAS 100:2005)*. BSI, London.
- 5.1.4 HM Government. The Town and Country Planning (Tree Preservation) (England) Regulations 2012. London: Office of Public Sector Information (OPSI).
- 5.1.5 Lonsdale, D. (1990) *Principles of Tree Hazard Assessment and Management*. The Stationery Office, London.
- 5.1.6 Matheny, N. & Clark, J.R. (1998) *Trees and Development*. ISA, Champaign, IL.
- 5.1.7 Mattheck, C. & Breloer, H. (1994) *The Body Language of Trees*. The Stationery Office, London.
- 5.1.8 Johnson, O. & More, D. (2004) *Collins Tree Guide*. London: HarperCollins.
- 5.1.9 National Joint Utilities Group (NJUG4) (2007) Guidelines for the planning, installation and maintenance of utility services in proximity to trees. NJUG, London.
- 5.1.10 National Tree Safety Group (2011) *Common sense risk management of trees*. NTSG
- 5.1.11 Office of the Deputy Prime Minister (ODPM) 2006, *Tree Preservation Orders, A Guide to the Law and Good Practice*. Office of Public Sector Information (OPSI).
- 5.1.12 Patch, D. & Holding, B. (1996) Arboricultural Practice Note 12: Through the Trees to Development. Arboricultural Practices Notes.
- 5.1.13 Robertson, J, Jackson, N & Smith, M (2006) *Tree Roots in the Built Environment*. The Stationery Office, London.
- 5.1.14 Thomson Ecology (2015) Report Reference: ACAM206/006/002/001

## 6. Appendix 1 - Tree Schedule

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T1	1	<i>Malus tschonoskii</i> ; pillar apple	13	220	2	2	2	2	1.5SW	3	Middle- aged	10-20	Fair	Fair	Stem wounds	-	C1	22
T2	1	<i>Pyrus calleryana</i> ; callery pear	8	150	1	1	1	1	2SE	2	Young	20-40	Good	Good	-	-	C1	10
T3	1	<i>Malus tschonoskii</i> ; pillar apple	11	230	2	2	2	2	2.5W	3	Middle- aged	20-40	Good	Good	Minor stem wounds	-	B1;2	24
T4	1	<i>Quercus ilex</i> ; holm oak	7	220	1	3	2	2	1.5S	1	Young	20-40	Fair	Fair	Pruning wounds	-	C1	22
T5	1	<i>Cedrus atlantica</i> 'Glauca'; blue Atlas cedar	16	370	4	2	3	3	3S	3	Middle- aged	20-40	Good	Fair	Three codominant stems from 3m; narrow forks	-	B1;2	62
T6	1	<i>Fraxinus excelsior</i> ; ash	15	290	4	3	3	2	3SE	3	Middle- aged	>40	Good	Good	Self-set	-	C1;2	38
T7	1	<i>Acer pseudoplatanus</i> ; sycamore	9	210	2	2	2	2	3S	3	Young	>40	Good	Fair	Codominant stems; self- set	-	C1	20
T8	1	<i>Quercus cerris</i> ; turkey oak	4	90	1	3	1	0	1.5SE	1	Young	>40	Good	Fair	Poor form	-	C1	4
T9	1	<i>Chamaecyparis lawsoniana</i> ; Lawson's cypress	7	220	1	1	1	1	2N	1.5	Middle- aged	20-40	Good	Good	-	-	C1	22

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T10	1	<i>Platanus x hispanica</i> ; London plane	21	640	10	8	2	4	2.5NW	3	Mature	>40	Good	Fair	Off-site	-	B1;2	185
T11	1	<i>Platanus x hispanica</i> ; London plane	10	370	1	1	3	2	3NE	4	Middle-aged	>40	Good	Fair	Pollard	-	C1;2	62
T12	1	<i>Acer platanoides</i> ; Norway maple	15	420	3	1	2	6	3W	5	Middle-aged	20-40	Good	Fair	Codominant stems	-	B2	80
T13	1	<i>Acer platanoides</i> ; Norway maple	14	170, 250, 270, 240, 250	2	2	2	2	3NW	3	Middle-aged	>40	Good	Fair	Five stems	-	C1	129
T14	1	<i>Chamaecyparis lawsoniana</i> ; Lawson's cypress	12	230	1	1	1	1	1.5W	1.5	Middle-aged	20-40	Good	Fair	Pruning stubs	-	C1	24
T15	2	<i>Sorbus aria</i> ; whitebeam	10	440	3	4	3	2	3N	3	Middle-aged	>40	Good	Fair	Slight lean to north; included main fork; history of crown reduction	-	B1;2	88
T16	2	<i>Salix x sepulcralis</i> 'Chrysocoma'; weeping willow	3	390	1	4	5	1	1.5S	0.5	Middle-aged	<10	Good	Fair	Crown heavily skewed to south; significant wound stem length of stem; decay fungi at base	Fell to ground level	U	69
T17	2	<i>Salix x sepulcralis</i> 'Chrysocoma'; weeping willow	15	830	8	7	7	6	6SE	3	Mature	20-40	Fair	Good	Heavily thinned crown; rib of reaction wood length of main stem	-	B1;2	312
T18	3	<i>Sorbus aria</i> ; whitebeam	9	370	6	7	2	3	1.5E	3	Mature	20-40	Good	Fair	Slight lean; pruning wounds	-	B1;2	62
T19	3	<i>Sorbus aria</i> ; whitebeam	9	310	3	3	3	3	2.5S	2	Mature	20-40	Good	Good	-	-	B1;2	43
T20	3	<i>Sorbus aria</i> ; whitebeam	8	340	1	3	2	3	2N	2	Mature	10-20	Fair	Fair	Large limb removed in past; slight lean	-	C1;2	52

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T21	3	<i>Sorbus aria</i> ; whitebeam	8	310	2	3	1	2	2E	3	Mature	20-40	Good	Fair	Exposed/damaged roots	-	B1;2	43
T22	3	<i>Sorbus aria</i> ; whitebeam	8	410	2	5	1	3	2N	2	Mature	20-40	Good	Fair	Exposed/damaged roots	-	B1;2	76
T23	3	<i>Sorbus aria</i> ; whitebeam	8	360	2	3	3	4	2W	2	Mature	20-40	Good	Good	-	-	B1;2	59
T24	3	<i>Platanus x hispanica</i> ; London plane	21	900	2	1 0	8	8	4E	4	Mature	20-40	Good	Fair	Columnar stem cavity	Determine extent of cavity	B1;2	366
T25	3	<i>Platanus x hispanica</i> ; London plane	22	820	8	7	4	7	9N	5	Mature	>40	Good	Good	-	-	A1;2	304
T26	4	<i>Platanus x hispanica</i> ; London plane	21	710	4	1 0	7	7	5E	5	Mature	>40	Good	Good	Off-site	-	B1;2	228
T27	4	<i>Acer platanoides</i> ; Norway maple	11	310	3	3	3	3	2N	3	Middle- aged	>40	Good	Good	Off-site	-	B1;2	43
T28	4	<i>Acer platanoides</i> ; Norway maple	11	300	3	3	3	3	2W	3	Middle- aged	>40	Good	Good	Off-site	-	B1;2	41
T29	4	<i>Prunus serrulata</i> ; Japanese cherry	5	160	1	4	3	2	2SE	2	Middle- aged	10-20	Fair	Fair	Grafted; exposed/damaged roots	-	C1	12
T30	4	<i>Pterocarya fraxinifolia</i> ; caucasian wingnut	7	220	4	4	4	4	2NE	3	Middle- aged	20-40	Good	Good	Basal epicormic growth; staked	Remove stake and basal epicormic growth	B1;2	22
T31	4	<i>Populus x canadensis</i> ; hybrid black poplar	18	640	2	5	4	2	10S	8	Mature	20-40	Good	Fair	Pollard; stem epicormic growth	-	B2	185

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T32	4	<i>Populus x canadensis</i> ; hybrid black poplar	18	610	3	3	3	3	11SW	12	Mature	20-40	Good	Fair	Pollard	-	B2	168
T33	4	<i>Populus x canadensis</i> ; hybrid black poplar	19	600	3	3	3	3	12S	12	Mature	20-40	Good	Fair	Pollard; stem epicormic growth; exposed/damaged roots	-	B2	163
T34	4	<i>Populus x canadensis</i> ; hybrid black poplar	12	430	2	2	2	2	8NW	8	Middle-aged	10-20	Fair	Fair	Pollard; pruning wounds; stem epicormic	-	C2	84
T35	4	<i>Populus x canadensis</i> ; hybrid black poplar	18	490	3	3	3	3	12W	12	Mature	20-40	Good	Fair	Pollard	-	B2	109
T36	4	<i>Populus canescens</i> ; grey poplar	20	640	8	7	2	2	13W	14	Mature	20-40	Good	Fair	Pollard	-	B2	185
T37	4	<i>Populus x canadensis</i> ; hybrid black poplar	18	640	9	8	2	4	2N	5	Mature	20-40	Good	Fair	Pollard; exposed/damaged roots	-	B2	185
T38	4	<i>Betula pubescens</i> ; downy birch	14	270	3	2	4	5	3W	4	Mature	10-20	Good	Fair	-	-	C1	33
T39	5	<i>Platanus x hispanica</i> ; London plane	19	740	2	6	4	7	6W	5	Mature	>40	Good	Good	History of crown reduction	-	B1;2	248
T40	5	<i>Platanus x hispanica</i> ; London plane	18	830	8	6	1	6	5N	6	Mature	>40	Good	Good	History of crown reduction	-	B1;2	312
T41	5	<i>Platanus x hispanica</i> ; London plane	17	580	4	4	4	4	7NE	7	Middle-aged	>40	Good	Good	Restricted access; base not visible; measurements estimated	-	B1;2	152
T42	5	<i>Acer saccharinum</i> ; silver maple	14	520	5	4	4	2	5N	5	Mature	20-40	Good	Fair	Off-site; history of crown reduction	-	B2	122

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T43	5	<i>Acer saccharinum</i> ; silver maple	14	430	5	2	3	2	2W	4	Mature	20-40	Good	Fair	History of crown reduction	-	B2	84
T44	5	<i>Platanus x hispanica</i> ; London plane	16	550	6	2	4	4	2W	5	Mature	>40	Good	Fair	History of crown reduction	-	B1;2	137
T45	5	<i>Platanus x hispanica</i> ; London plane	17	740	5	5	3	5	5E	6	Mature	>40	Good	Good	History of crown reduction	-	B1;2	248
T46	6	<i>Platanus x hispanica</i> ; London plane	21	720	6	7	6	6	4N	6	Mature	>40	Good	Good	Off-site; history of crown reduction	-	B1;2	235
T47	6	<i>Platanus x hispanica</i> ; London plane	20	670	7	1 0	7	6	4S	6	Mature	>40	Good	Fair	Off-site	-	B1;2	203
T48	6	<i>Tilia x europea</i> ; common lime	11	390	3	3	4	5	4N	4	Middle- aged	20-40	Good	Fair	Off-site; slight lean; lifting paving slabs	-	B1;2	69
T49	6	<i>Tilia x europea</i> ; common lime	14	460	4	4	4	4	4N	5	Middle- aged	20-40	Good	Good	Lifting paving slabs	-	B1;2	96
T50	7	<i>Platanus x hispanica</i> ; London plane	20	920	5	5	5	5	7N	6	Mature	>40	Good	Good	Off-site; history of crown reduction	-	B1;2	383
T51	7	<i>Platanus x hispanica</i> ; London plane	18	420	5	5	5	5	4W	5	Middle- aged	>40	Good	Good	-	-	B1;2	80
T52	7	<i>Platanus x hispanica</i> ; London plane	19	710	5	5	5	5	4NE	6	Mature	>40	Good	Good	Off-site; history of crown reduction	-	B1;2	228
T53	7	<i>Platanus x hispanica</i> ; London plane	19	740	5	5	6	7	4S	6	Mature	>40	Good	Good	Off-site; history of crown reduction	-	B1;2	248

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T54	7	<i>Platanus x hispanica</i> ; London plane	20	670	5	5	5	5	4E	6	Mature	>40	Good	Good	Off-site; history of crown reduction	-	B1;2	203
T55	7	<i>Platanus x hispanica</i> ; London plane	20	710	5	5	5	5	8N	7	Mature	>40	Good	Good	Off-site; history of crown reduction	-	B1;2	228
T56	7	<i>Acer pseudoplatanus</i> ; sycamore	9	320	3	3	3	3	3S	3	Middle-aged	10-20	Fair	Fair	Thin crown	-	C1;2	46
T57	7	<i>Acer pseudoplatanus</i> ; sycamore	9	250	2	3	2	3	4E	3	Middle-aged	10-20	Fair	Fair	Thin crown	-	C1	28
T58	7	<i>Acer pseudoplatanus</i> ; sycamore	10	330	3	3	3	3	3.5SE	4	Middle-aged	10-20	Fair	Fair	-	-	C1;2	49
T59	7	<i>Acer pseudoplatanus</i> ; sycamore	8	240	2	2	2	2	3S	3	Middle-aged	10-20	Fair	Poor	History of crown reduction; basal cavity	-	C1	26
T60	7	<i>Acer pseudoplatanus</i> ; sycamore	12	400	4	4	4	4	4SW	3	Middle-aged	10-20	Fair	Fair	Pruning wounds	-	C1;2	72
T61	7	<i>Platanus x hispanica</i> ; London plane	23	920	1 0	1 0	6	6	6N	5	Mature	>40	Good	Fair	Small basal cavity on roadside	Determine extent of cavity	B1;2	383
T62	8	<i>Sorbus intermedia</i> ; Swedish whitebeam	12	440	2	5	6	4	2W	5	Mature	20-40	Good	Fair	Growing in raised planter; pruning wounds	-	B1;2	88
T63	8	<i>Sorbus intermedia</i> ; Swedish whitebeam	11	350	1	4	1	4	2W	5	Middle-aged	10-20	Fair	Fair	Growing in raised planter; heavily thinned crown; suppressed	-	C1;2	55
T64	8	<i>Sorbus intermedia</i> ; Swedish whitebeam	12	440	5	5	2	4	2.5W	5	Mature	20-40	Good	Fair	Growing in raised planter	-	B1;2	88

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T65	8	<i>Magnolia delavayi</i> ; Chinese evergreen magnolia	4	220	3	1	2	2	1.5N	1.5	Middle- aged	10-20	Good	Fair	Slight lean to south-west; evergreen	-	C1	22
T66	8	<i>Platanus x hispanica</i> ; London plane	16	590	8	6	3	7	4.5W	7	Middle- aged	>40	Good	Fair	Codominant stems; one stem reduced; exposed/damaged roots	-	B1;2	157
T67	8	<i>Platanus x hispanica</i> ; London plane	18	650	1 0	7	1	8	5N	6	Middle- aged	20-40	Good	Fair	Crown skewed to north; exposed/damaged roots; recent concrete over roots	-	B1;2	191
T68	8	<i>Platanus x hispanica</i> ; London plane	23	690	5	8	4	3	8N	8	Middle- aged	>40	Good	Good	Off-site	-	B1;2	215
T69	8	<i>Platanus x hispanica</i> ; London plane	25	760	9	5	8	8	10N	10	Middle- aged	>40	Good	Good	Off-site; good form	-	A1;2	261
T70	8	<i>Platanus x hispanica</i> ; London plane	18	550	3	2	9	5	9W	8	Middle- aged	>40	Good	Fair	Off-site	-	B1;2	137
T71	8	<i>Platanus x hispanica</i> ; London plane	16	620	8	6	4	6	3N	5	Middle- aged	>40	Good	Fair	Exposed/damaged roots	-	B1;2	174
T72	8	<i>Ailanthus altissima</i> ; tree of heaven	22	850	9	1 0	8	6	2E	7	Mature	20-40	Good	Good	Heavily thinned crown; growing in raised planter	-	B2	327
T73	8	<i>Sorbus aria</i> ; whitebeam	9	400	4	3	3	2	2N	3	Mature	10-20	Fair	Fair	History of crown reduction; included main fork	-	C1;2	72
T74	8	<i>Sorbus aria</i> ; whitebeam	9	270	1	5	4	1	3E	5	Middle- aged	10-20	Poor	Fair	Framework pollarded; lean to east; large stem wound	-	C1	33
T75	8	<i>Sorbus aria</i> ; whitebeam	10	510	3	4	3	2	2SW	5	Mature	10-20	Poor	Fair	Framework pollarded; included main fork	-	C1;2	118

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
T76	8	<i>Robinia pseudoacacia</i> ; false acacia	15	670	4	4	4	1	2N	3	Mature	20-40	Good	Fair	Framework pollard	-	B1;2	203
T77	8	<i>Betula pubescens</i> ; downy birch	15	490	6	7	4	5	3E	4	Mature	10-20	Good	Good	Deadwood in crown; washing line round stem	Remove deadwood from crown	C1;2	109
T78	8	<i>Prunus serrulata</i> ; Japanese cherry	4	90	2	2	2	2	1N	1.5	Middle-aged	10-20	Good	Fair	-	-	C1	4
T79	8	<i>Prunus serrulata</i> ; Japanese cherry	4	90	1	1	1	1	2N	1.5	Young	20-40	Good	Good	-	-	C1	4
T80	8	<i>Ilex aquifolium</i> ; holly	4	140	2	2	2	2	2NW	1.5	Middle-aged	20-40	Good	Good	Crown close to building	-	C1	9
T81	8	<i>Prunus serrulata</i> ; Japanese cherry	4	80	1	1	1	1	2E	1.5	Young	20-40	Good	Good	-	-	C1	3
T82	10	<i>Platanus x hispanica</i> ; London plane	22	830	8	7	9	9	9W	8	Mature	>40	Good	Good	Off-site	-	A1;2	312
T83	10	<i>Platanus x hispanica</i> ; London plane	20	780	5	5	5	5	9N	8	Mature	>40	Good	Fair	Off-site; history of crown reduction; large burr on stem	-	B1;2	275
T84	11	<i>Carpinus betulus</i> ; hornbeam	17	600	5	5	5	5	3NE	6	Mature	20-40	Good	Fair	Off-site; measurements estimated; included forks	-	B1;2	163
T85	11	<i>Carpinus betulus</i> ; hornbeam	15	520	4	4	4	4	3N	3	Mature	20-40	Good	Fair	Off-site; measurements estimated; history of crown reduction	-	B1;2	122

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
G1	1	<i>Quercus ilex</i> ; holm oak; <i>Acer campestre</i> ; field maple	8	160	1	1	1	1	-	1	Middle-aged	20-40	Good	Fair	Holm oak and field maple	-	C1	-
G2	1	<i>Prunus avium</i> ; wild cherry; <i>Fraxinus excelsior</i> ; ash	14	240	2	2	2	2	-	3	Young	>40	Good	Fair	Self-set cherry and ash	-	C1	-
G3	3	<i>Sorbus aucuparia</i> ; rowan; <i>Prunus avium</i> ; wild cherry; <i>Acer pseudoplatanus</i> ; sycamore	6	140	2	2	2	2	-	2	Middle-aged	20-40	Fair	Fair	Sycamore, rowan and dead cherry	Fell dead cherry	C1	-
G4	4	<i>Prunus padus</i> ; bird cherry; <i>Prunus serrulata</i> ; Japanese cherry	5	180	2	2	2	2	-	2	Middle-aged	10-20	Fair	Fair	Two cherry	-	C1	-

Tree/ Group No.	Site No.	Species	Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height of Lowest Limb and Direction (m)	Crown Clearance (m)	Age Class	Estimated Remaining Contribution (years)	Condition		Comments	Preliminary Management Recommendations	BS Category	RPA (m <sup>2</sup> )
					N	E	S	W					Physiology	Structure				
G5	4	<i>Populus tremula</i> ; aspen; <i>Sambucus nigra</i> ; elder; <i>Prunus padus</i> ; bird cherry; <i>Liquidambar styraciflua</i> ; sweet gum; <i>Cornus sanguinea</i> ; common dogwood	9	250	2	2	2	2	-	1	Middle- aged	20-40	Fair	Fair	Group of mixed broadleaves	-	C1;2	-
G6	4	<i>Prunus avium</i> ; wild cherry; <i>Fraxinus ornus</i> ; manna ash; <i>Prunus serrulata</i> ; Japanese cherry	18	450	4	4	4	4	-	3	Middle- aged	20-40	Good	Good	Two ash and two cherry	-	B1;2	-
G7	8	<i>Ilex aquifolium</i> ; holly	7	140	1	1	1	1	-	1.5	Middle- aged	20-40	Good	Good	Group of close grown holly	-	C1	-

## 7. Appendix 2 - Table of Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
<b>Trees unsuitable for retention (see Note)</b>				
<b>Category U</b> Those in such a condition that they cannot be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> <li>Trees that have serious, irremediable, structural defects, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>Trees that are dead or are showing signs of significant, immediate and irreversible overall decline</li> <li>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve			DARK RED
	<b>1 Mainly arboricultural values</b>	<b>2 Mainly landscape values</b>	<b>3 Mainly cultural values, including conservation</b>	
<b>Trees to be considered for retention</b>				
<b>Category A</b> Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principle trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
<b>Category B</b> Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE
<b>Category C</b> Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY