

# **Arboricultural impact analysis**

## **Trees**

**at and adjacent to**

**Twickenham Rediscovered Programme -  
Riverside  
Twickenham,  
TW1 3DU**

**for**

**London Borough of Richmond-upon-Thames**

## **Skerratt**

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## 1. Introduction

- 1.1 This report contains a detailed appraisal of 49 trees standing within or adjacent to the boundary of the proposed Twickenham Rediscovered Programme - Riverside, Twickenham TW1 3DU
- 1.2 The report considers the health and safety of the trees under their current growing conditions and assesses the likely impact of the proposed development measured against the advice and guidance set out in *BS5837 2012: Trees in relation to design, demolition and construction – Recommendations*.
- 1.3 The original site inspection on which this report is based took place on the afternoon of Tuesday 02 May 2017 in dry, overcast conditions. A follow-up inspection was made on Thursday 08 June 2017 in similar weather conditions.
- 1.4 This report was commissioned by Validus LM on behalf of the client in an email dated 11 April 2017 and confirmed by London Borough of Richmond-upon-Thames Purchase Order No. 300001184.
- 1.5 I have been provided with the following drawings and documents in digital format (pdf, dwg and .docx):
  - Survey Solutions Drawing No. 18013-200-01 – Topographical survey
  - Relevant planning submission technical reports and drawings
- 1.6 The **Tree survey plan** in **Appendix a** is based on Survey Solutions Drawing No. 18013-200-01 – Topographical Survey and additional on-site measurements. The **Tree constraints & removals plans** in the same appendix is based on the **Tree survey plan** with the red line boundary and footprint of the proposed development, taken from the relevant planning submission drawing, overlaid.

## 2. Background information

### 2.1 Layout, extent and topography

- 2.1.1 The proposed development site comprises 1, 1A and 1B King Street, the west side of Water Lane between King Street and The Embankment, and the north side of The Embankment between Water Lane and Diamond Jubilee Gardens.
- 2.1.2 The longer axis of the site runs roughly south west to north east.
- 2.1.3 The general topography slopes downwards from north to south and more gently from east to west.
- 2.1.4 From King Street to the southern edge of the proposed development area there is a drop in levels of approximately 3m over a horizontal distance of about 100m. From east to west the maximum drop in levels is about 1m over a horizontal distance of about 100m.
- 2.1.5 The **Tree survey plan** in **Appendix a** shows the existing site layout and the locations of the trees referred to in this report.

### 2.2 Geology and soils

- 2.2.1 According to British Geological Survey (BGS) data, the site is located upon Quaternary (geologically recent) Langley Silts, surface deposits of windblown origin commonly referred to as Brickearths, resting upon Kempton Park Gravels, river terrace deposits of similar age.
- 2.2.2 These surface deposits overlie deep Palaeogene London Clay bedrock.
- 2.2.3 Geotechnical and Environmental Associates (GEA) Desk Study and Ground Investigation Report dated October 2017 describes the complex history of the site considered in this report (excluding a narrow strip of land along the southern boundary of the Diamond Jubilee Gardens).
- 2.2.4 The borehole and trial pit logs which support its findings confirm the presence of the geological formations referred to above as well as a surface layer of Made Ground between 0.6 and 1.7m deep.
- 2.2.5 The GEA report summarises the Made Ground as '*typically dark brown, slightly sandy, gravelly clay with fragments of brick, slate, concrete, tarmac, ash and coal*'.

### 2.3 Planning constraints

- 2.3.1 The site is within London Borough of Richmond-upon-Thames Conservation Area CA8 – Twickenham Riverside.
- 2.3.2 None of the trees referred to in this report are covered by a Tree Preservation Order (TPO).

## **2.4 The trees**

2.4.1 The trees referred to in this report are described in detail in the **Tree survey schedule** in **Appendix a** and their locations are shown on the **Tree survey plan** in the same appendix.

## **2.5 The proposed development**

2.5.1 Demolition and removal of all existing buildings and structures and re-development with a mixed-use development on the site of 1A, 1B King Street and 2/4 Water Lane; the site of the remaining former swimming pool buildings at the corner of Water Lane and The Embankment; and the river-facing parcel of land on the Embankment in front of Diamond Jubilee Gardens.

2.5.2 Full planning application for the demolition and removal of all existing buildings and structures and redevelopment with a mixed-use development of the site at 1A, 1B King Street and 2/4 Water Lane; the site of the remaining former swimming pool buildings at the corner of Water Lane and The Embankment; and the river-facing parcel of land on the Embankment in front of Diamond Jubilee Gardens. The development proposals comprise: three seasonal units (201m<sup>2</sup>) at Lower Ground Floor level; 505m<sup>2</sup> A3 floor space, 250m<sup>2</sup> B1 floor space, 244m<sup>2</sup> A1 floor space and 62m<sup>2</sup> flexible commercial at ground floor level; 39 residential apartments at first, second and third floors (18 no. 1 bedroom, 19 no. 2 bedroom and 2 no. 3 bedroom, including six no. affordable homes); new public square / areas of public realm throughout the site; a Lower Ground Floor car park with new vehicular access from The Embankment consisting of 23 car parking spaces and cycle storage; reconfiguration of street parking in the roads immediately adjacent to the Site; amended pedestrian access and landscaping to the South of Diamond Jubilee Gardens; and amendment of service vehicle access to the service road at the rear of Diamond Jubilee Gardens.

## 3. Analysis

### 3.1 General

- 3.1.1 The **Tree constraints plans** in **Appendix a** show the recommended Root Protection Area (RPA) for each tree, re-configured where appropriate to take account of partial and complete barriers to the lateral spread of roots.
- 3.1.2 In this respect, I have assumed that lateral root spread beneath the carriageway of any public highway will be limited to 2000mm.
- 3.1.3 The RPAs highlight the primary potential area of conflict between proposed development and retention of existing trees, namely conflicting demands for space at and below ground level.

### 3.2 Trees to be removed

- 3.2.1 One tree group (G009) and 4 individual trees (T008, 014, 015 and 034) are to be removed to enable the development.

#### *Sycamore group 009 and individual tree 010*

- 3.2.2 Sycamore 010 stands within Group 009 but has been described individually because it is larger than the surrounding Sycamores that make up the group. In my opinion both (the group and the individual tree) are of natural seedling origin.
- 3.2.3 The Sycamores that make up Group 009 are young-to-middle aged and date from the time that the site on which they stand, ceased to be actively used and maintained.
- 3.2.4 It will be necessary to remove completely both Group 009 and Tree 010 for development purposes.
- 3.2.5 From the point of view of visual amenity, Group 009 and Tree 010 provide a green backdrop along the eastern side of the Diamond Jubilee Gardens.
- 3.2.6 However, the area will retain its verdant character by virtue of the retention of all other trees within the Diamond Jubilee Gardens and the Embankment and proposed new tree and hedge planting will mitigate any loss as a result of the removal of the group.

#### *Sycamore 034*

- 3.2.7 Sycamore 034 is a young-to-middle aged tree growing in a rectangular raised bed. It too dates from the time when the site on which it stands ceased to be actively used.
- 3.2.8 It currently makes a very modest contribution to public visual amenity. Proposed soft landscaping will rapidly compensate for its loss.

## *Himalayan Birches 014 & 015*

- 3.2.9 These 2 young trees make a modest contribution to the visual amenities of the Embankment and the Diamond Jubilee Gardens.
- 3.2.10 Their removal is required in preparation for hard and soft landscaping works to enhance the visual amenities and accessibility of the boundary between the Jubilee Gardens and the Embankment car park.
- 3.2.11 Their contribution will be rapidly compensated for and enhanced as a result of the proposed improvement works.

### **3.3 Trees to be retained**

- 3.3.1 Apart from the trees referred to in 3.2 above, all the trees listed in the **Tree survey schedule** in **Appendix a** are to be retained.

#### *Possible impacts below ground*

- 3.3.2 There are no overlaps between the proposed development footprint (including ancillary external works (hard and soft landscaping, access roads and other services) and the RPA of any retained tree.

#### *Possible impacts above ground*

- 3.3.3 The nearest tree to proposed commercial and residential accommodation is Fastigiate Hornbeam 007, which is just over 17m to the south west of proposed Unit 4.
- 3.3.4 At this separation distance there will be no overhead shading issues to address and only modest lateral shading for part of the year in the mid-to-late afternoon.
- 3.3.5 Because of the large separation distance between retained trees and proposed residential and commercial accommodation, pressure for tree removal or severe pruning by future occupants because of perceived risk in extreme weather conditions is unlikely to be a significant issue.
- 3.3.6 Tree group 035-037 inclusive (2 Italian Alders and 1 Whitebeam) will stand approximately 13m to the north east of the proposed Town Square on the opposite side of Water Lane.

## 4. Conclusions

- 4.1 The Twickenham Area Action Plan (TAAP) allocates this site for a mix of uses including commercial and residential redevelopment enabling the wider regeneration of the area. The modest tree losses that will be required to enable the development considered in this report, are small in relation to the size and quality of the total tree resource. In meeting the wider aims of the TAAP, only one significant tree (Sycamore 008 – Category B) will require removal as part of the proposal. All other significant trees will be retained as stipulated within the TAAP.
- 4.2 The absence of any foreseeable adverse impacts upon retained trees as a result of the proposed development is a significant benefit.
- 4.3 Proposed soft and hard landscaping proposals that form an integral part of the proposed scheme will compensate for any loss of visual amenity as a result of the removal of Sycamore Group 009 and Tree 010 and, in particular, will enhance the visual quality of Water Lane and the southern edge of the Diamond Jubilee Gardens.
- 4.4 The draft **Arboricultural Method Statement** accompanying this analysis sets out tree protection measures and appropriate working practices to eliminate damage to retained trees for the duration of the construction programme.

**Appendix a**  
**Tree survey schedule**  
**Tree survey plan**  
**Tree constraints and**  
**removals plans**



## Explanatory notes

For general information on any entry in the detailed survey text, refer to the notes below which are organised on a column by column basis.

### Tree number

All trees have been numbered in the survey text to correspond to the location numbers shown on the accompanying Tree survey plan. No trees have been marked on site.

### Species

Common English names have been used wherever possible and Latin names are listed (in brackets in *italics*) in all cases.

### Dimensions

**Height** - are recorded in m.

**Stem diameter** – recorded in mm at breast height (1.5m) wherever possible. Where measurement at 1.5m is not possible, one of the alternative methods set out in *Annex C of BS5837:2012* has been used.

If the diameter has been measured at a different height, this has been recorded, e.g. 60 @ 1m = 60mm diameter at 1m height.

Other abbreviations used:

av - average

est/e - estimated

ms - multi-stemmed

max – maximum

gl - ground level

**Crown spread** - radial crown spreads in metres have been recorded at four points on the circumference of the crown (north, east, south and west). The accompanying Tree survey plan shows approximate crown shapes based on these measurements

**Crown height** - the height of the first major branch and the height of the lowest point of the crown are recorded in metres eg 3/3

## Explanatory notes

### Age

Y	Young	SM	Semi-mature
EM	Early mature	M	Mature
OM	Over-mature		

Where the precise age of a tree is known, it has been recorded in brackets adjacent to the general classification i.e. M(7).

### Condition

#### Physiological condition

Gives a measure of biological vigour and of the presence or absence of disease, insect attack or other debilitating factors.

G	Good
F	Fair
P	Poor

#### Structural condition

Gives a measure of each tree's physical form and mechanical stability.

G	Good
F	Fair
P	Poor

### Comments

Descriptive notes on the tree's shape, local environment and condition.

### Recommendations

Management recommendations under existing conditions.

### Separation distance (existing and proposed)

The distance between centre stem and the nearest point of existing or proposed built structures

## Explanatory notes

### **RPA radius**

The radius of each tree's Root Protection Area (RPA) as defined in *BS5837:2012 – Trees in relation to design, demolition and construction - Recommendations*

### **Life expectancy**

An approximate estimate for each tree's anticipated future safe life in the following ranges:

- <10 years
- 10-20 years
- 20-40 years
- 40+ years

### **Retention category**

This grading is based on the recommendations set out in *BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations*. The categories are summarised in the standard as follows:

- A Trees of high quality with an estimated remaining safe life of at least 40 years
- B Trees of moderate quality with an estimated remaining safe life of at least 20 years
- C Trees of low quality with an estimated remaining safe life of at least 10 years, or young trees with a stem diameter below 150mm
- U Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years

In addition the British Standard requires one or more subcategories to be applied to the main Retention Category. In summary these are as follows:

- 1 Mainly arboricultural qualities (that is individual aesthetic characteristics)
- 2. Mainly landscape qualities
- 3. Mainly cultural values, including conservation

Tree No.	Species	Height (m)	Diam (mm)	Crown Spread (m)				Crown Height (m)	Age	Physiological Condition	Structural Condition	Comments	RPA Radius (m)	Recommendations	Life Expectancy	Retention Category	Retention Sub-category
				N	E	S	W										
001	Indian Bean Tree ( <i>Catalpa bignonioides</i> )	9	250	4.5	4.5	4.5	4.5	1/2	SM	G	G	Single slightly leaning stem: well balanced crown: minor dead wood	3.00	Remove dead wood	20-40	B	1
002	Indian Bean Tree ( <i>Catalpa bignonioides</i> )	8	310 @ 1m	3.5	6	3.5	3	1/2	SM	G	G	Single leaning stem: quite well balanced spreading crown: minor dead wood and a small broken limb	3.72	Remove dead wood and small broken limb	20-40	B	1
003	Black Poplar ( <i>Populus nigra</i> )	9	160	2.5	3	3	3	1/1	SM	G	G	Single upright stem with a deformity at 1.5m (point of origin of a large lateral limb now removed): well proportioned crown: a commemorative tree standing in an ornamental timber tree guard	1.92	No immediate action required	40+	B	3
004 (02838)	Fastigate Hornbeam ( <i>Carpinus betulus</i> 'Fastigiata')	14	550	4	6	5	2.5	3/3	EM	G	G	Single upright stem: main branch fork at 3m: cracks in main stem (adaptive growth?): one sided crown (away from W)	6.60	Review (general condition)	20-40	B	1
005	Fastigate Hornbeam ( <i>Carpinus betulus</i> 'Fastigiata')	14	520	6	5	7	5	3/3	EM	G	G	Single upright stem forks at 3m into 3: well balanced pyramidal crown	6.24	No immediate action required	20-40	B	1
006	Fastigate Hornbeam ( <i>Carpinus betulus</i> 'Fastigiata')	14	680	7	7.5	7.5	6	2/3	EM	G	G	Single upright stem forks at 2.5m into 5: well balanced pyramidal crown: ivy on main stem: bird's nest in main branch fork	8.16	Cut ivy	20-40	B	1
007	Fastigate Hornbeam ( <i>Carpinus betulus</i> 'Fastigiata')	15	560	5.5	7.5	6	5	3/4	EM	F	F	Single upright stem forks at 2.5m into 4: large vertical bark wound on main stem with dead wood above (fire damage?): discoloured foliage in small patches above the bark wound	6.72	Review (general condition)	?	B	1
008	Sycamore ( <i>Acer pseudoplatanus</i> )	15	350 est	6	5	6	5	2/3	SM	G	G	Single upright stem: quite well proportioned spreading crown: the largest tree in group 009, standing on its northern edge	4.20	No immediate action required	40+	B	1/2
009	Sycamore ( <i>Acer pseudoplatanus</i> )	10-13	250 max	5.5	5	5	4	2/2	SM	G	G	A group of naturally regenerated Sycamore and occasional Goat Willow, many of them multi-stemmed occupying, a vacant site	2.40	No immediate action required	40+	C	2
010	4 x London Plane ( <i>Platanus x hispanica</i> )	3	130-150	2	2	2	2	2/2	SM	G	G	4 single stemmed trees arranged in a square with pleached crowns forming a green canopy	1.68	Continue current maintenance programme	40+	B Group	1
011	4 x London Plane ( <i>Platanus x hispanica</i> )	3	130-150	2	2	2	2	2/2	SM	G	G	4 single stemmed trees arranged in a square with pleached crowns forming a green canopy	1.68	Continue current maintenance programme	40+	B Group	1

Client: London Borough of Richmond-upon-Thames  
 Location: Twickenham Rediscovered Programme - Riverside, Twickenham, TW1 3DU  
 Date: 08.06.17  
 Job No.: 557A

# Tree survey schedule

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Tree No.	Species	Height (m)	Diam (mm)	Crown Spread (m)				Crown Height (m)	Age	Physiological Condition	Structural Condition	Comments	RPA Radius (m)	Recommendations	Life Expectancy	Retention Category	Retention Sub-category
				N	E	S	W										
012	4 x London Plane ( <i>Platanus x hispanica</i> )	3	130-150	2	2	2	2	2/2	SM	G	G	4 single stemmed trees arranged in a square with pleached crowns forming a green canopy	1.68	Continue current maintenance programme	40+	B Group	1
013	4 x London Plane ( <i>Platanus x hispanica</i> )	3	130-150	2	2	2	2	2/2	SM	G	G	4 single stemmed trees arranged in a square with pleached crowns forming a green canopy	1.68	Continue current maintenance programme	40+	B Group	1
014	Himalayan Birch ( <i>Betula jacquemontii</i> )	6	110	2	2	2	2	1/2	Y	G	G	Single upright stem: well proportioned spreading ascending crown: forms a group with 014	1.32	No immediate action required	40+	C+	1
015	Himalayan Birch ( <i>Betula jacquemontii</i> )	6	90	2	1	2	2	1/2	Y	G	G	Single upright stem: well proportioned spreading ascending crown: see 013	1.08	No immediate action required	40+	C+	1
016	Swedish Birch ( <i>Betula pendula</i> 'Dalecarlica')	9	100	2	2	1	2	2/1	Y	F	G	Single upright stem: quite well balanced pendulous crown showing possible signs of stress (foliage below optimum density)	1.20	Review (general condition)	10-20	C+	1/2
017	Silver Birch ( <i>Betula pendula</i> )	9	160	3	3	2.5	2	2/2	SM	P	P	Single slightly leaning stem: pendulous crown habit: nearly dead	1.92	Fell to near ground level	0	U	
018	Silver Birch ( <i>Betula pendula</i> )	10	210	2	3	3	2	2/1	SM	G	G	Single leaning stem: well balanced pendulous crown	2.52	No immediate action required	40+	B	1
019	Himalayan Birch ( <i>Betula jacquemontii</i> )	7	110	2.5	1.5	1.5	2	2/2	Y	G	G	Single upright stem: well balanced spreading crown	1.32	No immediate action required	40+	C+	1
020	Sycamore ( <i>Acer pseudoplatanus</i> )	13	100/ 190/ 190	3	4	4	4	2/2	SM	G	G	6 stemmed: quite well proportioned crown: 020-024 inclusive make up a linear group standing in an adjacent property about 1m above the level of the adjacent public highway	3.44	No immediate action required	40+	B Group	2
021	Sycamore ( <i>Acer pseudoplatanus</i> )	9	250/ 270	4	4	3	3	2/2	SM	G	F	Single upright main stem and 3 smaller ones: quite well proportioned: foliage a little below optimum density: see 020	4.42	No immediate action required	20-40	B Group	2
022	Sycamore ( <i>Acer pseudoplatanus</i> )	12	150/ 150	2	2	2	3	2/2	SM	G	G	2 stemmed: rather high narrow crown: see 020	2.55	No immediate action required	20-40	B Group	2
023	Sycamore ( <i>Acer pseudoplatanus</i> )	11	520 @ 1m	3.5	6	7	5	1/4	M	F	P	Single upright stem: foliage a little below optimum density	6.24	Review (general condition)	20-40	C	2

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Tree No.	Species	Height (m)	Diam (mm)	Crown Spread (m)				Crown Height (m)	Age	Physiological Condition	Structural Condition	Comments	RPA Radius (m)	Recommendations	Life Expectancy	Retention Category	Retention Sub-category
				N	E	S	W										
024	Ash ( <i>Fraxinus excelsior</i> )	15	580	7.5	6	5	5	3/2	M	G	F	Single upright stem: spreading branch system has been reduced in height and spread	6.96	No immediate action required	20-40	C	1/2
025	Pin Oak ( <i>Quercus palustris</i> )	8	190	3	3	3	3	2/2	SM	G	G	Single upright stem: well proportioned spreading crown: minor dead wood: foliage a little below optimum density: 025 - 033 inclusive make a up a fairly evenly spaced line parallel to and not far from the river edge	2.28	No immediate action required	40+	B	1/2
026	Pin Oak ( <i>Quercus palustris</i> )	8	190	3	3	3	3	2/2	SM	G	G	Single upright stem: well proportioned spreading crown: minor dead wood: similar to 025	2.28	No immediate action required	40+	B	1/2
027	Pin Oak ( <i>Quercus palustris</i> )	8	200	3	3	3	3	2/2	SM	F	G	Single upright stem: well proportioned spreading crown: minor dead wood: more stressed than 025	2.40	No immediate action required	20-40	B	1/2
028	Pin Oak ( <i>Quercus palustris</i> )	8	190	3	3	3	3	2/2	SM	F	G	Single upright stem: well proportioned spreading crown: minor dead wood: foliage below optimum density: see 025	2.28	No immediate action required	20-40	B	1/2
029	Pin Oak ( <i>Quercus palustris</i> )	8	180	3	3	3	3	2/2	SM	F	G	Single upright stem: well proportioned spreading crown: minor dead wood: foliage below optimum density: see 025	2.16	No immediate action required	20-40	B	1/2
030	Pin Oak ( <i>Quercus palustris</i> )	8	200	3	3	3	3	2/2	SM	F	G	Single upright stem: well proportioned spreading crown: minor dead wood: foliage below optimum density: see 025	2.40	No immediate action required	20-40	B	1/2
031	Pin Oak ( <i>Quercus palustris</i> )	8	200	3	3	3	3	2/2	SM	F	F	Single upright stem with significant surface splits in the bark: well proportioned spreading crown: foliage below optimum density: minor dead wood: see 025	2.40	Review (general condition)	10-20	B	1/2
032	Pin Oak ( <i>Quercus palustris</i> )	8	200	3	3	3	3	2/2	SM	F	G	Single upright stem: well proportioned spreading crown: minor dead wood: foliage below optimum density: see 025	2.40	No immediate action required	20-40	B	1/2
033	Pin Oak ( <i>Quercus palustris</i> )	8	220	3	3	3	3	2/2	SM	G	G	Single upright stem: well proportioned spreading crown	2.40	No immediate action required	40+	B	1/2
034	Sycamore ( <i>Acer pseudoplatanus</i> )	8	250 est	4	4	4	4	1/2	SM	G	G	Single main stem plus one subsidiary: main stem forks at 2m: quite well proportioned crown overall: of natural seedling origin	3.00	No immediate action required	20-40	C+	2
035	Italian Alder ( <i>Alnus cordata</i> )	19	520	4.5	2.5	5	7	3/3	EM	G	G	Single upright stem slight sweep (localised curvature at base): narrow pyramidal crown	6.24	No immediate action required	40+	B	1/2
036	Italian Alder ( <i>Alnus cordata</i> )	18	450	3.5	4	5	4	3/3	EM	G	G	Single upright stem slight sweep (localised curvature at base): narrow pyramidal crown	5.40	No immediate action required	40+	B	1/2

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# Tree survey schedule

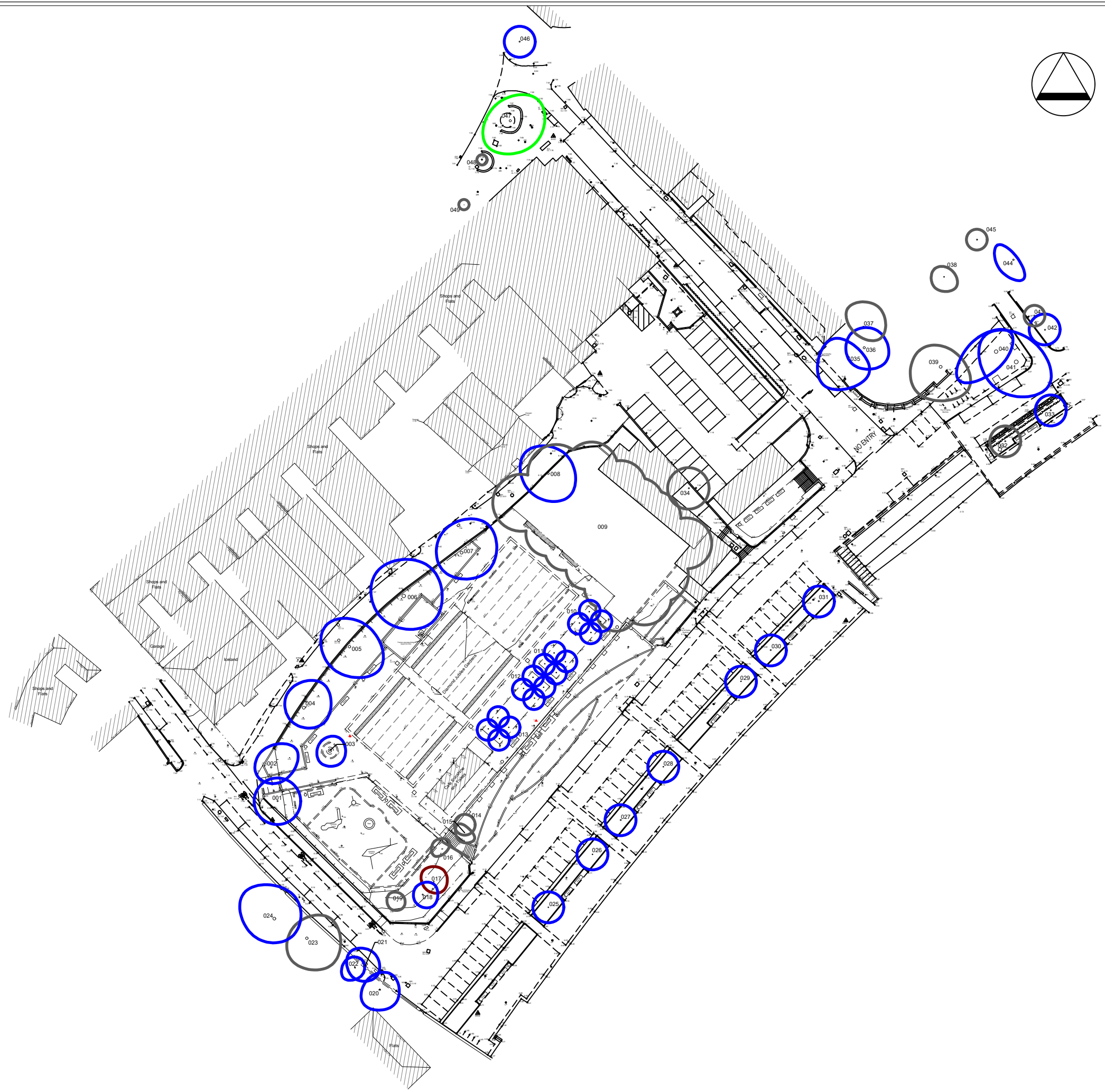
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Tree No.	Species	Height (m)	Diam (mm)	Crown Spread (m)				Crown Height (m)	Age	Physiological Condition	Structural Condition	Comments	RPA Radius (m)	Recommendations	Life Expectancy	Retention Category	Retention Sub-category
				N	E	S	W										
037	Whitebeam ( <i>Sorbus aria</i> )	9	270	4.5	5	4	2	2/2	M	G	F	Single leaning stem: very one sided (to N + E)	3.24	No immediate action required	20-40	C	1/2
038	Hornbeam ( <i>Carpinus betulus</i> )	6	140	2.5	2	3	2.5	1/1	Y	G	G	Single upright stem: well proportioned crown	1.68	No immediate action required	40+	C+	1/2
039	False Acacia ( <i>Robinia pseudoacacia</i> )	13	560	5	4	7	6.5	2/4	M	G	F	Single upright stem previously 2 stemmed: very large slowly decaying branch tear wound close to ground level: main branch fork at 2m: very one sided (to S)	6.72	Review (general condition)	10-20	C	1/1
040	Weeping Willow ( <i>Salix alba 'Pendula'</i> )	16	680	4.5	4.5	2	9	4/1	M	G	G	Single slightly leaning stem: cavity at 3m: taken in isolation the weeping crown is very one sided but this tree forms a group with 041	8.16	No immediate action required	20-40	B Group	1
041	Weeping Willow ( <i>Salix alba 'Pendula'</i> )	15	750	8	5	7.5	6	3/1	M	G	F	Single slightly leaning stems: significant branch removal in the recent past: see 040	9.00	No immediate action required	20-40	B Group	1
042	Canary Palm ( <i>Phoenix canariensis</i> )	5	na	3	3	3	3	0/0	SM	G	G	Single young tree with a well-proportioned starburst of leaves: stands in an adjacent garden	3.60	No immediate action required	40+	B	1
043	Chusan Palm ( <i>Trachycarpus fortunei</i> )	5	200	2	2	2	2	2/2	M	G	G	A middle-aged single stemmed example of the species growing in an adjacent garden	2.40	No immediate action required	20-40	C	1
044	Evergreen Magnolia ( <i>Magnolia grandiflora</i> )	9	300 est	4	1	4	3	2/2	M	G	G	A single stemmed example of the species growing close to and screening the gable wall of an adjacent dwelling	3.60	No immediate action required	40+	B	1
045	Purple Leaved Plum ( <i>Prunus cerasifera 'Atropurpurea'</i> )	5	200 est	2	2	2	2	2/2	M	G	G	Single upright stem: compact almost spherical crown (reduced in height and spread ion the past): stands in an adjacent garden	2.40	No immediate action required	20-40	C+	1
046	Manna Ash ( <i>Fraxinus ornus</i> )	7	210	3	3	3	3	2/2	SM	G	G	Single upright stem: well balanced spreading crown: stands in a small planting enclosure in paving on the southern edge of King Street	2.52	Continue current maintenance programme	40+	B	1
047	English Oak ( <i>Quercus robur/petraea</i> )	12	430	4	7	6.5	6.5	3/3	EM	G	G	Single upright stem: main branch fork at just under 3m: large lateral limb curves upwards from the main branch fork up the southern side of the crown: very minor dead wood: a seating area partially encircles the tree's base	5.16	No immediate action required	40+	A	1
048	Callery Pear ( <i>Pyrus calleryana</i> )	4	70	1	1	1	1	2/2	Y	G	G	Single upright stem: well proportioned crown: still staked and tied (with a protective guard): stands in a hard-surfaced public open space	0.84	Young tree maintenance	40+	C	1

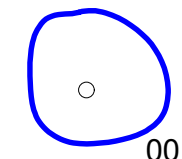
Client: London Borough of Richmond-upon-Thames  
 Location: Twickenham Rediscovered Programme - Riverside, Twickenham, TW1 3DU  
 Date: 08.06.17  
 Job No.: 557A

Tree No.	Species	Height (m)	Diam (mm)	Crown Spread (m)				Crown Height (m)	Age	Physiological Condition	Structural Condition	Comments	RPA Radius (m)	Recommendations	Life Expectancy	Retention Category	Retention Sub-category
				N	E	S	W										
049	Callery Pear ( <i>Pyrus calleryana</i> )	4	70	1	1	1	1	2/2	Y	G	G	Single upright stem: well proportioned crown: still staked and tied (with a protective guard); stands in a hard-surfaced public open space	0.84	Young tree maintenance	40+	C	1





KEY



EXISTING TREE

001

Trees are coloured on plan to correspond with the Retention Categories specified in BS5837:2012 Trees in relation to design, demolition and construction - Recommendations as follows:

- Category A - GREEN
- Category B - BLUE
- Category C - GREY
- Category U - RED


REVISION	CHK'D	APP'D	DATE

Client:  
LONDON BOROUGH OF RICHMOND-UPON-THAMES

Job Title:  
TWICKENHAM REDISCOVERED PROGRAMME  
RIVERSIDE  
TWICKENHAM  
TW1 3DU

Drawing Title:  
TREE SURVEY PLAN

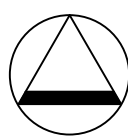
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Date: 08.06.17	Drawn by: RS
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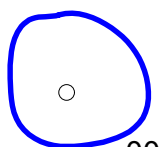
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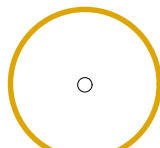


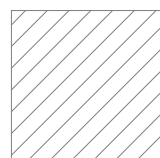
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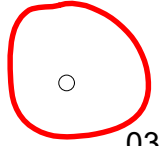
 EXISTING TREE  
006

Trees are coloured on plan to correspond with the Retention Categories specified in BS5837:2012 Trees in relation to design, demolition and construction - Recommendations as follows:

Category A - GREEN  
Category B - BLUE  
Category C - GREY  
Category U - RED

 ROOT PROTECTION AREA as defined in BS5837:2012 Trees in relation to design, demolition and construction - Recommendations  
006

 EXTENT OF DEVELOPMENT AREA

 TREE TO BE REMOVED FOR DEVELOPMENT PURPOSES  
034

REVISION	CHK'D	APP'D	DATE

Client:  
LONDON BOROUGH OF RICHMOND-UPON-THAMES

Job Title:  
TWICKENHAM REDISCOVERED PROGRAMME  
RIVERSIDE  
TWICKENHAM  
TW1 3DU

Drawing Title:  
TREE CONSTRAINTS & REMOVALS PLAN  
(WHOLE SITE)

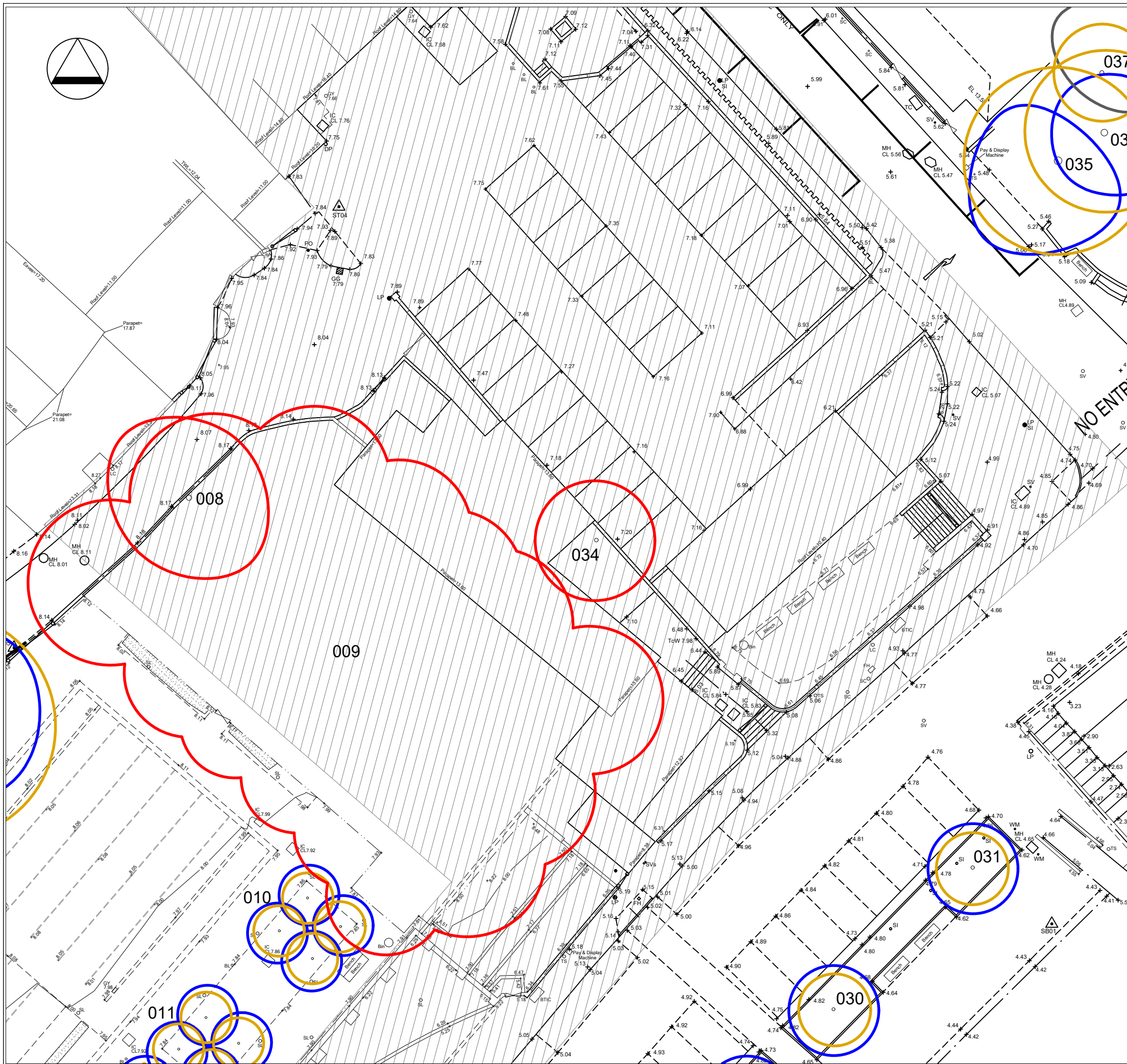
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Date: 20.10.17      Drawn by: RS

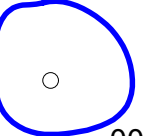
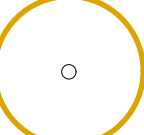

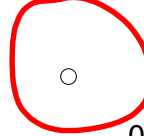
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**KEY**

-  006 EXISTING TREE
-  006 ROOT PROTECTION AREA as defined in BS5837:2012 Trees in relation to design, demolition and construction - Recommendations
-  EXTENT OF DEVELOPMENT AREA
-  034 TREE TO BE REMOVED FOR DEVELOPMENT PURPOSES

Trees are coloured on plan to correspond with the Retention Categories specified in BS5837:2012 Trees in relation to design, demolition and construction - Recommendations as follows:

- Category A - GREEN
- Category B - BLUE
- Category C - GREY
- Category U - RED

REVISION	CHK'D	APP'D	DATE

Client:  
LONDON BOROUGH OF RICHMOND-UPON-THAMES

Job Title:  
TWICKENHAM REDISCOVERED PROGRAMME  
RIVERSIDE  
TWICKENHAM  
TW1 3DU

Drawing Title:  
TREE CONSTRAINTS & REMOVALS PLAN  
(DETAIL A)

Drawing Number:  
557.02.02

Scale:  
1:250 (A3)

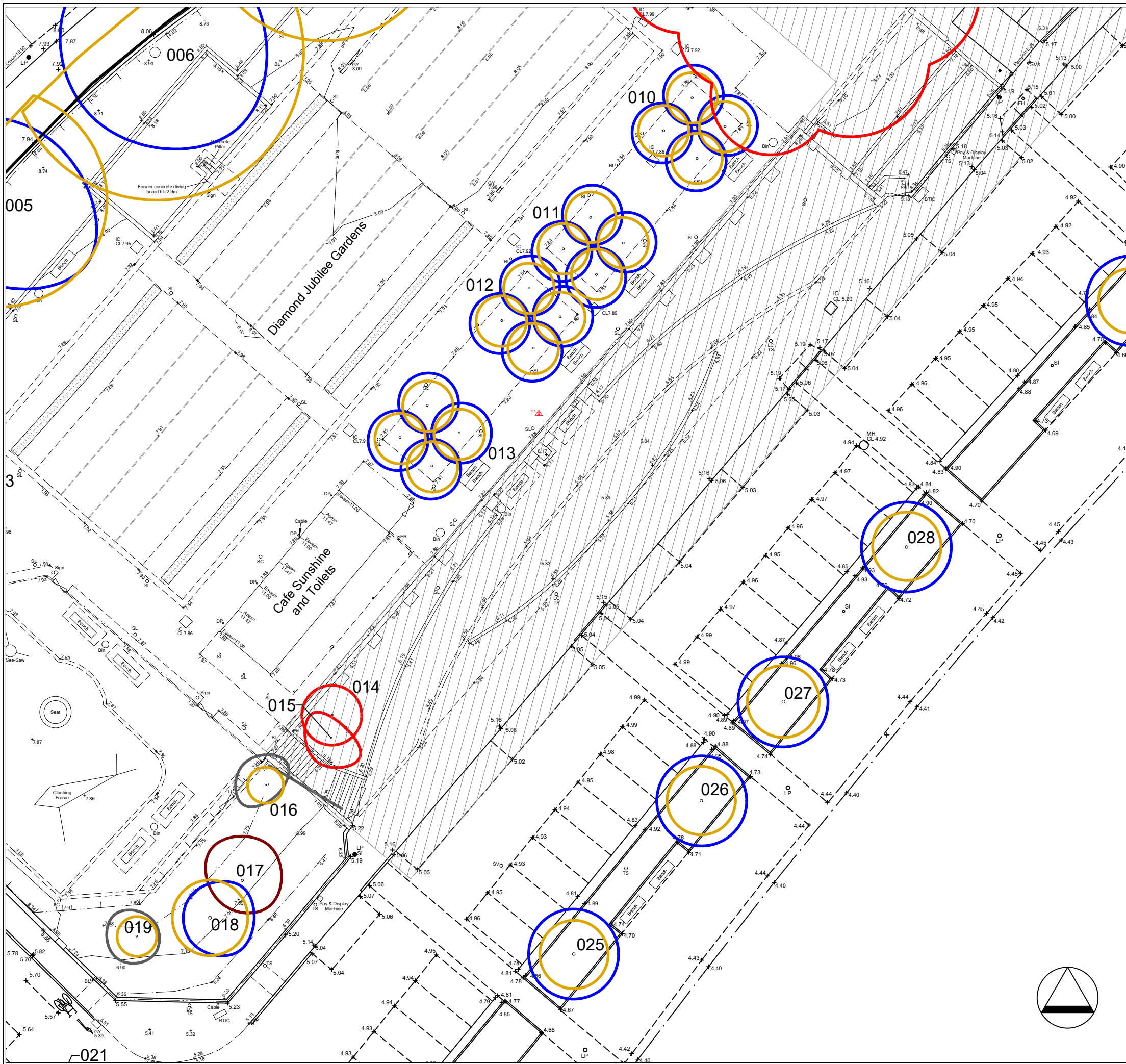
Date:  
20.10.17

Drawn by:  
RS

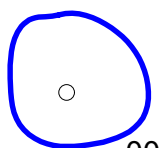
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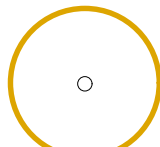


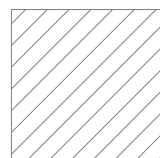
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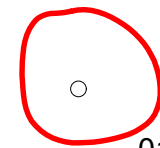
 EXISTING TREE  
006

Trees are coloured on plan to correspond with the Retention Categories specified in BS5837:2012 Trees in relation to design, demolition and construction - Recommendations as follows:

Category A - GREEN  
Category B - BLUE  
Category C - GREY  
Category U - RED

 ROOT PROTECTION AREA as defined in BS5837:2012  
Trees in relation to design, demolition and construction - Recommendations  
006

 EXTENT OF DEVELOPMENT AREA

 TREE TO BE REMOVED FOR DEVELOPMENT PURPOSES  
015

REVISION	CHK'D	APP'D	DATE

Client:  
LONDON BOROUGH OF RICHMOND-UPON-THAMES

Job Title:  
TWICKENHAM REDISCOVERED PROGRAMME  
RIVERSIDE  
TWICKENHAM  
TW1 3DU

Drawing Title:  
TREE CONSTRAINTS & REMOVALS PLAN  
(DETAIL B)

Drawing Number:  
557.02.04

Scale:  
1:250 (A3)

Date:  
20.10.17

Drawn by:  
RS

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