advanced Arboriculture

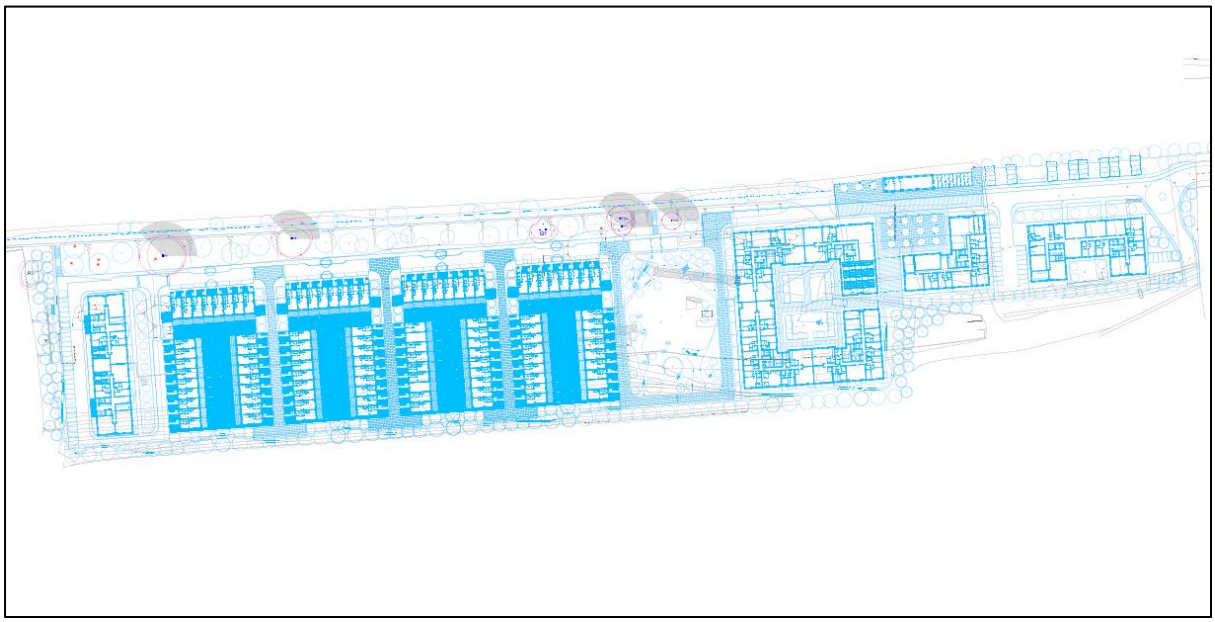
advanced:

progressive *adj.*
forward-thinking
forward-looking
unconventional
cutting edge
innovative

higher *adj.*
superior
highly developed
sophisticated
complex

British Standard 5837:2012
Arboricultural Survey

Land at Exmouth Junction
Exeter



Tom Hurley, BSc (For) Hons, M Arbor A

12th April 2019

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Version Control and Document History

Date	Version	Details
12.04.2019	1.0	Initial release

Client:	Eutopia Homes (Exeter) Ltd Sovereign House 4 Christian Road Douglas Isle of Man
Ref no:	TH/A279/0419
Site details:	Land at Exmouth Junction Exeter
Date of site inspection:	4th February 2019
Assessor & report author:	Tom Hurley, BSc(For)Hons, M Arbor A
Date report compiled:	12th April 2019
Method of delivery:	Electronic

Signed ---------- **Date** *12th April 2019*

This report is valid for two years from the date of site inspection. The condition of trees can change following severe weather conditions or due to the effect of pests and diseases or other abiotic factors, and therefore may warrant re-inspection of affected trees at a shorter interval than recommended in this report.

About the Author

Tom Hurley completed his Honours Degree in Forest Management (specialising in Arboriculture and Amenity Forestry) at the University of Aberdeen in 1994. After working for the Forestry Commission undertaking grant compliance inspections, Tom moved into local government as a Tree Officer for East Devon District Council, before running the West London office of the F A Bartlett Tree Expert Co, a job which included training at the company's laboratories in North Carolina. Since then he has primarily focussed on projects dealing with trees on development sites, as well as completing safety inspections and providing general arboricultural advice, including providing independent advice to local authority planners. Tom's portfolio of British Standard 5837 reports includes several infrastructure projects for Transport for London, new superstores for a number of the major UK supermarkets, and approaching one thousand smaller scale general development sites. As a level 6 tree inspector, Tom has been in his current role as Senior Consultant at Advanced Arboriculture since 2006 where his work includes preparing British Standard 5837:2012 reports, undertaking tree safety inspections for clients including Devon County Council and Devon and Somerset Fire and Rescue Service, and producing all the AutoCAD drawings for the consultancy. Tom is also a QTRA (Quantified Tree Risk Assessment) Registered User.

1.0 Report Introduction

1.1 Purpose of Report

1.1.1 To inspect trees on the proposed development plot in accordance with BS5837:2012, *Trees in relation to design, demolition and construction – Recommendations*. To comment on significant trees on the site or on neighbouring land adjacent to the development boundary where they may affect or be affected by development.

1.1.2 This report contains all the information required to enable a full and balanced evaluation of the trees on or adjacent to the proposed development plot. Whilst this information should be readily comprehensible for the majority of architects and local planning authority officers, guidance notes have been produced to provide additional information on British Standard 5837:2012, its methodologies and application and these are available upon request. Key guidance sheets directly relevant to this report have been attached at Appendix C below.

1.1.3 The following abbreviations may be used in this report:

BS5837	British Standard 5837:2012
RPA	Root protection area
CEZ	Construction exclusion zone
TLP	Tree Location Plan
TCP	Tree Constraints Plan
TPP	Tree Protection Plan
AMS	Arboricultural Method Statement
LPA	Local planning authority
TPO	Tree Preservation Order

1.1.4 This document contains the following British Standard 5837:2012 components:

- Tree Survey
- Tree Constraints Plan
- Arboricultural Impact Assessment
- Tree Protection Plan
- Arboricultural Method Statement

2.0 Information Summary

2.1 Survey Information	
Survey Date	4th February 2019
Survey Weather	Sunny with low wind speeds
Survey Staff	Tom Hurley

2.2 Supplied Information			
Drawings	Source	Reference Number	Description
	John F Hunt Group	Not known	Topographic Survey
	Darling Associates	17050 (03)-P-0G0	Proposed Site Layout

All trees present on topographical survey?	No

2.3 Site Information	
Site Access Location	Off Mount Pleasant Road
Site Access Ordnance Survey Grid Ref	SX 93111 93796
Site Topography	The central section of the site is relatively flat though there is a steep embankment which separates the central section of the site from the access road along the northern boundary and the rear boundaries of the dwellings immediately to the west.
Site Altitude	The site ranges between approximately 46 and 60 metres above sea level.
Indicative Wind Exposure	Wind exposure is expected to be moderate, especially on the northern and western embankments.
Soil Type	Freely draining slightly acid loamy soils.
Current Site Use	The site is presently used for a combination of storage units (mainly containerised) and rail infrastructure. Some areas of the site have been unused for many years and now feature extensive naturally regenerated vegetation.

2.3 Site Information	
Site Structures	With the exception of the brick-built pump house towards the eastern end of the northern boundary (assumed to be former railway accommodation), the structures on the site are all temporary or portable.
Site Surfaces	The site is primarily tarmac or concrete surfaced. The former railway sidings are unsurfaced but still retain some track remnants. The embankments are also unsurfaced.
Surrounding Land Use	North: Alotments; East: Supermarket; South: Railway lines; West: Residential.
Neighbouring Trees	The only neighbouring trees present are those on the alotment boundary, and a small number of naturally regenerated stems on the rear boundaries of the dwellings on Mount Pleasant Road.
Public Rights of Way	None.
Overhead Services	There are some telephone lines which cross the site.

2.4 Legal Constraints	
Local Planning Authority	Exeter City Council.
Tree Preservation Orders	None.
Conservation Area	The proposed development plot is not within a Conservation Area.

2.5 Survey Data	
Number of Trees	13
Number of Areas	6
Number of Groups	1
Number of Hedgerows	0
Number of Woodlands	0

3.0 Preliminary Tree Constraints Assessment

3.1 Outline Tree Stock Appraisal

- The tree stock on the site can be approximately demarcated into four broad compartments.
- The first compartment comprises the vegetation on the northern embankment which separates the access road from the lower section of the site. This features a disparate range of trees and mixed understorey, the significant majority of which is presumed to be naturally regenerated. Whilst most of this compartment has been identified collectively as area A2, a limited number of individual trees, T2 through T12 have been picked out, either because they are larger specimens which warrant a more robust commentary, or because they are higher quality specimens which have the greatest future potential in the context of any development of the site.

  Of these trees, Oaks T7, T8 and the three stems which comprise group G1, plus Silver Birches T11 and T12, have the greatest future potential and are considered worthy of retention.

  The remainder of the vegetation along this northern bank is relatively poor quality and not therefore considered to be a constraint in the context of any development of the site, albeit subject to the provision of new plantings as part of a comprehensive landscaping scheme. It is noted that some of the larger stems towards the western end of the slope, particularly Oak T2 and Sycamore T3, have been heavily undermined by what I assume to be badger setts. Furthermore, the stability of Oak T6 is questionable due to the presence of the shelter which has been cut into the bank immediately adjacent.
- The second compartment comprises the vegetation running along the eastern end of the northern boundary (areas A3, A4 and tree T13). This largely comprises Goat Willow stems with occasional Ash and Silver Birch within area A3. All of these trees appear to be naturally regenerated specimens and have negligible future potential, particularly in the context of any new development.
- The third compartment comprises the limited vegetation on the steep embankment at the western end of the site. Most of this is naturally regenerated scrub on the boundaries of the private gardens at the top of the slope, but there is one individual tree present, Lombardy Poplar T1. This is a large specimen which is a highly visible feature from within the proposed development plot and surrounding properties, however, it is a relatively short-lived species which is not well-suited to a residential environment and I do not therefore consider its retention to be appropriate in the context of any development of the site.

- The final compartment comprises the belt of dense naturally regenerated vegetation running along much of the southern boundary of the site (areas A5 and A6). This features a disparate mix of pioneer species which are common features on redundant railway land. Whilst area A5 is unquestionably British Standard 5837:2012 Category C vegetation, area A6 falls marginally into British Standard 5837:2012 Category B by virtue of its screening value for the properties on the opposite side of the railway lines.

  Whilst the screening value of the stems within area A6 is acknowledged, this has to be considered in the context of the environment in which they are growing, notably the rails of the former siding. The collective retention of these trees would effectively preclude the clearance of this potentially contaminated land and would require further active management to thin out the less desirable species, including Sycamore, Goat Willow and Ash. On balance, I therefore recommend the clearance of both area A5 and A6, ensuring that a new belt of trees with significant future potential be established along this southern boundary, both to screen any new dwellings from the railway, but also to soften the appearance of any development from the properties to the south of the railway.

3.2 Root Protection Areas

- Root protection areas have been shown on the Tree Constraints Plans. These have not been corrected for slope and, in the case of the trees on the northern embankment, are therefore overstated to the north and south.
- Root protection areas have been modified to recognise the presence of structures, including robust surfacing and retaining walls which will be expected to limit rooting development accordingly. In the case of the trees on the northern boundary, rooting is expected to be almost exclusively limited to the unsurfaced areas, with trees exploiting the ground further to the east and west where it is limited to the north and south.

3.3 Landscape and Visual Amenity Value

- The key trees in landscape terms are those on the northern embankment of the site, though their value is collective rather than individual so the retention of key trees will serve to enhance their value as individual landscape components.
- Lombardy Poplar T1 is a large individual landscape component, though it is acknowledged that its retention is impractical in the context of any development.
- Similarly, whilst the Silver Birches which comprise area A6 are a landscape feature, their retention is also impractical.

- The removal of landscape features such as Lombardy Poplar T1 and the trees within area A2 and A6 will need to be addressed by means of a robust landscaping scheme which offers significant numbers of new trees across the site.

3.4 Veteran Trees

- There are no veteran trees on site.

3.5 Environmental Considerations

- There is potential for bird nesting particularly across the site, particularly within the areas of dense scrub such as A2, A4, A5 and A6. Accordingly we advise that any works to these trees be scheduled for a time outside of bird nesting season (1st March through 31st August). Please contact Advanced Arboriculture for further advice should tree felling or scrub clearance works be considered on this site during the bird nesting season.
- We have not assessed the site for the presence of other protected species.

3.6 Shading, Dominance and Nuisance

- The key trees on the site which are considered worthy of retention are those on the northern embankment. The shade paths for these extend along the embankment and over the access road, so are not therefore considered to be a constraint.
- Providing some clearance between the northern embankment and any new dwellings to the south will minimise any perceived dominance in the future.

3.7 British Standard 5837:2012 Categorisation

- British Standard 5837:2012 category split:

  Trees - A: 0 (0%), B: 5 (38%), C: 8 (62%), U: 0 (0%)

  Areas - A: 0 (0%), B: 2 (29%), C: 5 (71%), U: 0 (0%)

3.8 Current Management Considerations

- Tree management at present is negligible and the current site usage is such that significant active management is unlikely to be a high priority.
- Whilst beyond the direct scope of this report, I did not note any trees in need of urgent attention from a safety perspective.

3.9 Site Access Considerations

- The site can be accessed via the existing surfaced routes, either from the east by the supermarket petrol filling station, or from the west off Mount Pleasant Road.

	Neither of these accesses are constrained by trees.
3.10	**Tree Constraints Summary**
• Whilst the site features a relatively large number of trees, the significant majority of these are not considered worthy of retention due to their poor form or compromised former industrial locations. • Those trees considered worthy of retention are all located on the northern embankment. • The removal of trees across the site will need to be addressed by the provision of a robust landscaping scheme which complements any development proposals and offers appropriate screening from surrounding properties and the railway line to the south.	

4.0 Arboricultural Impact Assessment

4.1	**Outline of Development Proposals**
• The proposals show the construction of a total of 465 new residential units of which 104 are town houses. • The development also offers both indoor and outdoor amenity spaces, along with landscaped boundary strips.	
4.2	**Site Clearance and Demolition**
• The development will require the complete clearance of the existing concrete surfacing of the storage yard, along with the lifting of the redundant railway infrastructure. • The existing pump house is to be retained and converted into the development's management suite.	
4.3	**Access to Public Highway**
• The main vehicular access enters the site at the eastern end where it links into the existing road network adjacent to the supermarket petrol filling station. • The existing vehicular access linking to Mount Pleasant Road is to be retained as a pedestrian and cycle access with two new sets of steps constructed on the bank, linking the path to the lower, main section of the site.	
4.4	**Impact on Local Landscape**

- The proposals require the removal of a large proportion of the trees on site, however, these are either poorer quality, British Standard 5837:2012 Category C or U specimens, or trees whose retention is impractical (the trees which comprise area A6).
- The most significant individual tree shown for removal is Lombardy Poplar T1; this tree is not considered worthy of long-term retention in the context of the redevelopment of the site.
- As already detailed within this report, the removal of these trees is to be addressed by the provision of large numbers of new trees, particularly on the site boundaries. This will provide some landscape mitigation in the short-term, and should provide a significant enhancement as the new trees mature in the longer term.

4.5 Tree Removals

- The proposals require the removal of Lombardy Poplar T1, Oaks T2, T6 and T9, Sycamores T3, T4 and T5, and Goat Willow T13.
- Areas A2, A3, A4, A5 and A6 are also to be cleared. The removal of vegetation within A1 in the site's redline boundary may also be desirable to allow for further new landscaping to be installed.

4.6 Tree Works

- Minor tree works are recommended for Oaks T8 and T10 to maximise their future potential.

4.7 Shading, Dominance and Nuisance

- There are not considered to be any shading, dominance or nuisance issues associated with the retention of identified trees on the northern embankment as they remain some distance away from any new residential units and cast their shade away from any amenity areas.

4.8 Ongoing Tree Management

- There will need to be regular safety inspections of all trees on the site, including retained specimens.
- Formative pruning, stake maintenance and removal, and replacement of failed trees will be necessary for all new plantings.

4.9 Construction Within the Root Protection Area

- There is a limited encroachment into the root protection area of Oak T7. This is to

be addressed by undertaking root pruning in accordance with the specification detailed within Arboricultural Guidance Sheet AGS403 (attached).

4.10 Levels Changes

- Other than the cutting back of the foot of the bank below Oak T7, the proposed site layout requires no levels changes within the root protection areas of any retained trees.

4.11 Service Runs

- The locations of service runs have not been determined to date. Every effort must be made by the project team to ensure that subterranean services are restricted to locations outside of the root protection areas of any retained trees. Reference to National Joint Utilities Group Publication Volume 4 "*Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*" is recommended in terms of both services design and installation.

4.12 Landscaping

- A detailed landscaping scheme which specifies the species, sizes and quantities of trees across the site will be required to ensure that any detrimental impact of development on the local landscape is minimised.
- Any hard landscaping within the root protection area of any retained trees which includes changes in ground levels (cut or fill), new walls or new paths will require further arboricultural review to ensure that any detrimental impact is limited. If unsustainable damage is considered to be unavoidable then the landscaping scheme will require revision.
- Soft landscaping near retained trees, including the planting of new trees and shrubs, must be undertaken with considerable care due to the potential for rooting damage. Mechanical rotovation or cultivation within the construction exclusion zones shown on the Tree Protection Plan must be avoided as this can cause significant damage to the rooting system of adjacent trees. I recommend that the locations of all new trees outside of the construction exclusion zones are demarcated with a heavy-duty ground protection panel of at least 1.0m x 1.0m for the duration of construction to minimise compaction, churning or contamination of the soil structure, thus maximising the potential for new trees to establish.
- All new trees must be sourced from a reputable nursery and planted in accordance with the recommendations detailed within British Standard 8545:2014. We are able to provide an independent verification of the quality of new trees prior to planting on request.

4.13	Engineering Solutions
	• No engineering solutions are likely to be required to deliver the arboricultural elements of this project.
4.14	**Further Mitigation Measures**
	• No further mitigation measures are likely to be required to deliver this project.
4.15	**Arboricultural Impact Assessment Summary**
	• It is acknowledged that the proposals do require the removal of a significant number of trees, however, these are poorer quality specimens (as determined by the British Standard 5837:2012 process) and the better quality trees on the northern embankment are shown for retention. • The impact on the visual amenity value of the local landscape is addressed by the provision of new trees across the development, particularly on the northern embankment, on the southern boundary where they will provide screening from the railway line, and within the public open spaces.
4.16	**Recommended Project Design Amendments**
	• No layout design amendments are considered necessary from an arboricultural point of view.

5.0 Tree Protection Measures

5.1	Protective Fencing Requirements
	• Five compounds of protective fencing are shown for the retained trees on the northern boundary. These generally require braced Heras panels (see Arboricultural Guidance Sheet AGS101 attached) running along the upper and lower sections of each slope; the specification for these matches the specification detailed within British Standard 5837:2012. • High visibility fencing (see Arboricultural Guidance Sheet AGS105) is also shown for some of the compounds on the Tree Protection Plan. The purpose of this is to act as a visual demarcation of the construction exclusion zones where the existing topography already offers a suitably robust barrier against access by plant, materials or personnel. • All fencing must be erected prior to the commencement of any mobilisation to site by contractors, plant or materials and must remain in situ until all construction

works have been completed and approval for removal is granted by the arboricultural supervisor.

- There may be instances on site where it is desirable to substitute braced Heras fencing with site hoarding; the specification for the hoarding and the method statement for its construction must be approved prior to installation by the arboricultural supervisor.

5.2 Ground Protection Requirements

- No additional ground protection is required as part of this project.

5.3 Arboricultural Supervision Requirements

- It is recommended that the site be inspected by a suitably qualified arboricultural supervisor on a monthly basis for the duration of construction. This will minimise the potential for damage to retained trees for the duration of construction and allow the site manager to raise any concerns regarding any forthcoming activities which may affect any retained trees on or adjacent to the site.

5.4 Bespoke Tree Protection Requirements

- Staff Induction
  The Arboricultural Method Statement references the attached Arboricultural Staff Induction Sheet. This must be read, understood and signed by all site operatives, including sub-contractors, as an integral element of their initial site induction. The purpose of this is to minimise the potential for damage to trees during construction.

- Root Pruning
  Where excavation is required on the outer sections of the root protection area, it will be necessary to undertake controlled excavation and root pruning. It is recommended that this be undertaken by a suitably qualified arboricultural contractor in accordance with the method statement detailed within Arboricultural Guidance Sheet AGS403. We are able to arrange these works on request.

- Site Organisation
  Prior to the commencement of any demolition or construction activities on site, the locations for site offices, welfare facilities, parking, a materials storage area and a concrete/plaster mixing area must be designated and marked on the Tree Protection Plan.

  It may be possible to locate site huts, cabins and welfare facilities where protective fencing is shown on the Tree Protection Plan, however, this will only be possible with the written consent of the arboricultural supervisor and subject to the following

conditions:

- The site huts will remain in situ for the duration of the project (if not, protective fencing will still be required prior to the installation of the huts, or after their removal);
- There is sufficient crown height available to accommodate the huts without the need for unauthorised crown lifting or pruning;
- Any services or sewerage for the huts must be remain above ground and not require excavation;
- No discharge from the huts, including grey water, shall be permitted within the demarcated construction exclusion zone, with the exception of rainwater from the roofs or guttering;
- Where foundation pads are required to support huts, these must comprise timber sleepers or concrete paving slabs placed on the existing ground level (digging foundations in must be avoided.

Parking, materials storage and materials mixing must remain outside of the designated construction exclusion zones, and the materials mixing area should be bunded or contained such that any spillage or rinsings cannot run towards the root protection areas of any retained trees.

Generally bonfires are forbidden by a planning condition, however, if bonfires are permitted, these must remain at least ten metres from either the construction exclusion zone, root protection area or crown spread of any tree, whichever is closer; this is to minimise any risk of heat damage to either the rooting zone or the above ground portions of retained trees.

5.5	**Tree Protection Statement Requirements**

- A separate Tree Protection Statement is not required for this project as the necessary documents are included within appendices B and C.

5.6	**Tree Protection Measures Summary**

- A combination of protective fencing and an arboricultural supervision programme should minimise the potential for damage to retained trees on and adjacent to the proposed development plot.

6.0 Conclusions and Recommendations

6.1 It is considered that the proposed site layout (based on Darling Associates drawing number 17050 (03)-P-0G0) is sustainable in arboricultural terms.

6.2 The trees that are to be retained will form an effective landscape feature in the context of the proposed development.

6.3 The loss of Lombardy Poplar T1, Oaks T2, T6 and T9, Sycamores T3, T4 and T5, Goat Willow T13 and areas A2, A3, A4, A5 and A6 are recommended subject to the provision of new plantings as discussed within this report.

Report ends

Appendix A

Survey Data

- Tree Survey Data Schedule
- Arboricultural Works Specification

Tree Survey Data Schedule

The following section shows the results of the tree inspection. Abbreviations used in the survey are as follows:

Tree No	Corresponding to plan (may be prefixed with “N” for a neighbouring tree or “S” for a street tree)	
Species	Common name	
Ht	Detailed in metres	
Sprd	Crown spread as measured at the four cardinal points of the compass	
Stem Dia	Diameter at breast height in mm (1.5 metres above ground level), or measured in accordance with the prescribed British Standard protocol in the case of multi-stemmed specimens (see Annex C in British Standard 5837:2012 for full details)	
RPA	Root Protection Area radius in metres (derived from the British Standard 5837:2012 formulae)	
Ht to L/B	Crown height, as measured to the height of the lowest branch	
Dir	Direction from which the lowest branch arises	
Cr Ht	Height of crown above ground level	
Age Class	Y	Young (grown to less than one third of life expectancy)
	MA	Middle Aged (grown to between one to two-thirds of life expectancy)
	M	Mature (grown to over two thirds of normal life expectancy)
	OM	Over Mature
	V	Veteran
SULE	Safe useful life expectancy range in years	
Cond	Condition, both physiological and structural:	
	G	Good (trees with no significant defects)
	F	Fair (trees with some defects amenable to surgery)
	P	Poor (trees with significant defects)
BS Cat	British Standard 5837:2012 Category (see Table 1 in British Standard 5837:2012 for full details)	
m/s	Denotes multistem tree along with the individual stem diameters	
#	Denotes estimated value where access was not possible	

Data Type: Individual Trees	Site Reference: TH/A279/0219	Location: Exmouth Junction, Exeter	Inspection Date: 4th February 2019	Lead Surveyor: Tom Hurley

Tree No.	Species	Tree Height	Crown Spread	Stem Dia (mm)	RPA Radius	RPA Area	LB Ht / Dir	Cr Ht	Age Cl	SULE	Cond Phys/Str	Observations	Recommendations	BS Cat
T1	Lombardy Poplar	31.0	N: 6.0 E: 6.0 S: 7.0 W: 5.0	1200 #	14.40	651	3.5/E	3.5	M	10-20	G/F	• Typical tall drawn specimen located on steep slope • Some inherently weak unions developing • Negligible rooting anticipated to extend to the east of the retaining wall • Ivy present	• Dismantle to near ground level to facilitate development	C1
T2	Oak	7.0	N: 3.5 E: 3.5 S: 3.0 W: 5.5	350	4.20	55	2.0/S	1.5	Y	>40	G/F	• Leaning naturally regenerated specimen with contorted main stem • Tree has limited future potential • Extensive badger activity noted around base	• Dismantle to near ground level to facilitate development	C1
T3	Sycamore	14.0	N: 6.5 E: 7.5 S: 7.5 W: 6.5	660 (m/s: 590, 300)	7.80	191	2.0/S	0.0	MA	>40	G/F	• Twin-stemmed naturally regenerated specimen • Dominant stem has lost leader • Sub-dominant stem features significant structural defects • Dense Ivy present • Extensive badger activity noted around base	• Dismantle to near ground level to facilitate development	C1
T4	Sycamore	18.0	N: 7.0 E: 8.0 S: 8.0 W: 9.0	970 (m/s: 650, 550, 460)	11.70	430	1.0/S	0.0	M	10-20	F/P	• Twin-stemmed specimen with inherently weak basal union	• Dismantle to near ground level to facilitate development	C1
T5	Sycamore	10.0	N: 0.0 E: 4.0 S: 5.0 W: 5.5	300	3.60	41	2.0/S	1.5	Y	10-20	F/F	• Leaning specimen dominated by Sycamore T4 adjacent • Tree features an unbalanced crown • Tree has limited future potential • Ivy present	• Dismantle to near ground level to facilitate development	C1
T6	Oak	16.0	N: 3.0 E: 1.0 S: 8.0 W: 7.0	490	6.00	113	3.5/W	2.5	MA	10-20	G/F	• Tree features an unbalanced crown due to proximity of Oak T7 adjacent • Shelter has been cut into the bank almost immediately below main stem • Tree has limited future potential • Ivy present	• Dismantle to near ground level to facilitate development	C1
T7	Oak	17.0	N: 10.0 E: 11.0 S: 10.0 W: 8.0	970 (m/s: 560, 480, 430, 330, 330)	11.70	430	2.0/N	1.5	M	20-40	G/F	• Overgrown multi-stemmed coppice stool • Some deadwood present	• No works required at the present time	B2
T8	Oak	14.0	N: 5.5 E: 9.0 S: 10.0 W: 7.5	850 (m/s: 790, 300)	10.20	327	2.0/W	1.5	M	>40	G/F	• Twin-stemmed specimen • Both stems lean • Northern sub-dominant stem has failed at ~2.0m	• Remove northern sub-dominant stem to source	B2
T9	Oak	16.0	N: 8.5 E: 8.5 S: 7.5 W: 4.0	980 (m/s: 650, 550, 490)	11.70	430	1.5/E	0.0	MA	20-40	G/F	• Triple-stemmed specimen • Two stems have been massively reduced • Tree features a compromised basal structure	• Dismantle to near ground level to facilitate development	C1

Data Type: Individual Trees **Site Reference: TH/A279/0219** **Location: Exmouth Junction, Exeter** **Inspection Date: 4th February 2019** **Lead Surveyor: Tom Hurley**

Tree No.	Species	Tree Height	Crown Spread	Stem Dia (mm)	RPA Radius	RPA Area	LB Ht / Dir	Cr Ht	Age Cl	SULE	Cond Phys/Str	Observations	Recommendations	BS Cat
T10	Oak	13.0	N: 6.0 E: 6.0 S: 3.5 W: 6.5	570	6.90	150	1.0/W	0.0	MA	>40	G/G	• Limb on northern side of main stem at ~2.0m has split ~1.5m from union with main stem	• Remove significant deadwood and split limb	B2
T11	Silver Birch	16.0	N: 3.0 E: 5.0 S: 5.0 W: 4.0	420	5.10	82	2.5/W	1.5	MA	20-40	G/F	• Tree features an unbalanced crown due to proximity of Oak T10 to the north • Ivy present	• Sever ivy at base of tree	B2
T12	Silver Birch	14.0	N: 4.5 E: 5.0 S: 4.5 W: 5.0	390	4.80	72	2.0/N	1.0	MA	20-40	G/G	• Tree features congested point of main crown break at ~3.5m	• Dismantle to near ground level to facilitate development	B2
T13	Goat Willow	9.5	N: 5.0 E: 8.0 S: 5.5 W: 6.5	470 (m/s: 10 x 150)	5.70	102	0.0/N	0.0	MA	10-20	F/P	• Scruffy naturally regenerated multi-stemmed specimen • Tree has negligible future potential	• No works required at the present time	C1

Data Type: Areas and Groups	Site Reference: TH/A279/0219	Location: Exmouth Junction, Exeter	Inspection Date: 4th February 2019	Lead Surveyor: Tom Hurley

Ref No.	Species	Tree Height	Crown Spread	Stem Dia (mm)	RPA Radius	RPA Area	LB Ht	Cr Ht	Age Cl	SULE	Cond Phys/Str	Observations	Recommendations	BS Cat
A1	• Sycamore • Pittosporum	<14.0	N: <8.0 E: <8.0 S: <8.0 W: <8.0	<400 #	<4.80	<72	>=0.0	>=0.0	MA	10-20	F-G/F	• Area of naturally regenerated Sycamore at top of embankment • Sycamores are multi-stemmed specimens and appear to be located on both sides of the boundary fence • Single Pittosporum located to east of boundary fence • No individually or collectively outstanding stems present	• Consider removal of vegetation within redline boundary of site	C1
A2	• Sycamore • Ash • Goat Willow • Oak • Turkey Oak • Elder • Hawthorn • Pear • Blackthorn	<15.0	N: <6.0 E: <6.0 S: <6.0 W: <6.0	<500 #	<6.00	<113	>=0.0	>=0.0	Y-MA	20-40	P-G/P-G	• Strip of variable quality naturally regenerated specimens • Trees have experienced negligible management with any works being undertaken with limited attention to arboricultural detail • Extensive badger activity noted at western end of slope • Higher quality trees or trees of particular note have been detailed individually • No individually or collectively outstanding stems present	• Clear to facilitate development • Ensure retention of trees T7, T8, T10, T11, T12 and G1	C1
A3	• Ash • Goat Willow • Silver Birch	<12.0	N: <7.0 E: <7.0 S: <7.0 W: <7.0	<350	<4.20	<55	>=0.0	>=0.0	Y-MA	10-20	F-G/F	• Line of naturally regenerated stems on boundary to rear of brick building • No individually or collectively outstanding stems present	• Clear to facilitate development	C1
A4	• Goat Willow	<10.0	N: <6.0 E: <6.0 S: <6.0 W: <6.0	<350 #	<4.20	<55	>=0.0	>=0.0	Y-MA	10-20	F-G/F	• Strip of naturally regenerated specimens growing adjacent to the boundary fence • No individually or collectively outstanding stems present	• Clear to facilitate development	C1
A5	• Sycamore • Goat Willow • Silver Birch • Ash	<10.0	N: <7.0 E: <7.0 S: <7.0 W: <7.0	<400 #	<4.80	<72	>=0.0	>=0.0	Y-MA	10-20	P-G/P-G	• Area of dense emergent scrub on redundant railway sidings • No individually or collectively outstanding stems present	• Clear to facilitate development	C1
A6	• Silver Birch • Goat Willow	<14.0	N: <5.0 E: <5.0 S: <5.0 W: <5.0	<250	<3.00	<28	>=0.0	>=0.0	Y	>40	P-G/P-G	• Area of naturally regenerated pioneer species which have established on redundant railway sidings	• Clear to facilitate development	B3
G1	• Oak	<10.0	N: <3.5 E: <5.5 S: <6.5 W: <5.0	<370	<4.50	<64	>=2.0	>=2.0	Y	>40	G/G	• Group of three young Oaks with good future potential as a group	• No works required at the present time	B2

Arboricultural Works Specification

General Considerations

- The appointed tree work contractor must ensure that all tree works comply with British Standard 3998:2010 (*Tree Works – Recommendations*).
- It is strongly advised that the appointed tree contractor is Arboricultural Association Approved to ensure high standards and a consistency of work.
- The need for stump removal is at the discretion of the client. If stumps are not to remain in situ, options for removal include grinding or mechanical extraction. Stump grinding will not remove all roots but does substantially reduce the bulk of any arisings. Mechanical extraction will require large mechanical plant and any stumps will require disposal, and this can potentially be expensive. If mechanical extraction is the preferred option then it will generally be prudent for the client to request that the appointed tree contractor leave all stumps at a height of 1.0 to 1.5 metres above ground level to increase the leverage which can be applied to them.
- Advanced Arboriculture are able to assist in the preparation of tender documentation if required at the request of the client.

Wildlife & Countryside Act 1981 & Countryside & Rights of Way Act 2000

- Under the above acts it is an offence to recklessly damage or destroy the nest of a wild bird whilst in use or being built.
- Planning consent does not provide a defence against prosecution under these Acts.
- Trees and shrubs on this site may contain nesting birds between 1st March and 31st August.
- It is advisable to undertake a survey of the site before commencing any tree or shrub removal between these dates, to ensure that no nesting birds are present.
- Advanced Arboriculture are able to undertake a survey to identify the presence of bats or nesting birds if required at the request of the client.

Tree No.	Species	Preliminary management recommendations
T1	Lombardy Poplar	Dismantle to near ground level to facilitate development
T2	Oak	Dismantle to near ground level to facilitate development
T3	Sycamore	• Dismantle to near ground level to facilitate development
T4	Sycamore	• Dismantle to near ground level to facilitate development
T5	Sycamore	• Dismantle to near ground level to facilitate development
T6	Oak	• Dismantle to near ground level to facilitate development
T7	Oak	• Undertake root pruning at the foot of the bank as detailed within Arboricultural Guidance Sheet AGS403

Tree No.	Species	Preliminary management recommendations
T8	Oak	• Remove northern sub-dominant stem to source
T9	Oak	• Dismantle to near ground level to facilitate development
T10	Oak	• Remove significant deadwood and split limb
T11	Silver Birch	• Sever ivy at base of tree
T12	Silver Birch	• Dismantle to near ground level to facilitate development
T13	Goat Willow	• No works required at the present time
A1	Sycamore Pittosporum	• Consider removal of vegetation within redline boundary of site
A2	Sycamore Ash Goat Willow Oak Turkey Oak Elder Hawthorn Pear Blackthorn	• Clear to facilitate development • Ensure retention of trees T7, T8, T10, T11, T12 and G1
A3	Ash Goat Willow Silver Birch	• Clear to facilitate development
A4	Goat Willow	• Clear to facilitate development
A5	Sycamore Goat Willow Silver Birch Ash	• Clear to facilitate development
A6	Silver Birch Goat Willow	• Clear to facilitate development
G1	Oak	• No works required at the present time

Appendix B

Arboricultural Drawings

- British Standard 5837:2012 Tree Location Plans
- British Standard 5837:2012 Tree Constraints Plans
- British Standard 5837:2012 Tree Protection Plans
- Arboricultural Method Statement

Key

- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Crown spread
- Root protection area
- BS5837:2012 shade path
- Trees to remove to enable development
- Proposed development footprint
- Indicative development tree planting
- Construction exclusion zone
- Braced Heras fencing (see AGS101)
- High-visibility barrier fencing (see AGS105)
- Root pruning line (see AGS 403)

Drawing Title:
Tree Location Plan Master

Location:
Exmouth Junction Exeter

Date:	Drawing Number:	Revision:
12.04.2019	TH/A279/0219	1.0
Scale:	Paper Size:	Drawn By:
1:750	A0	TH

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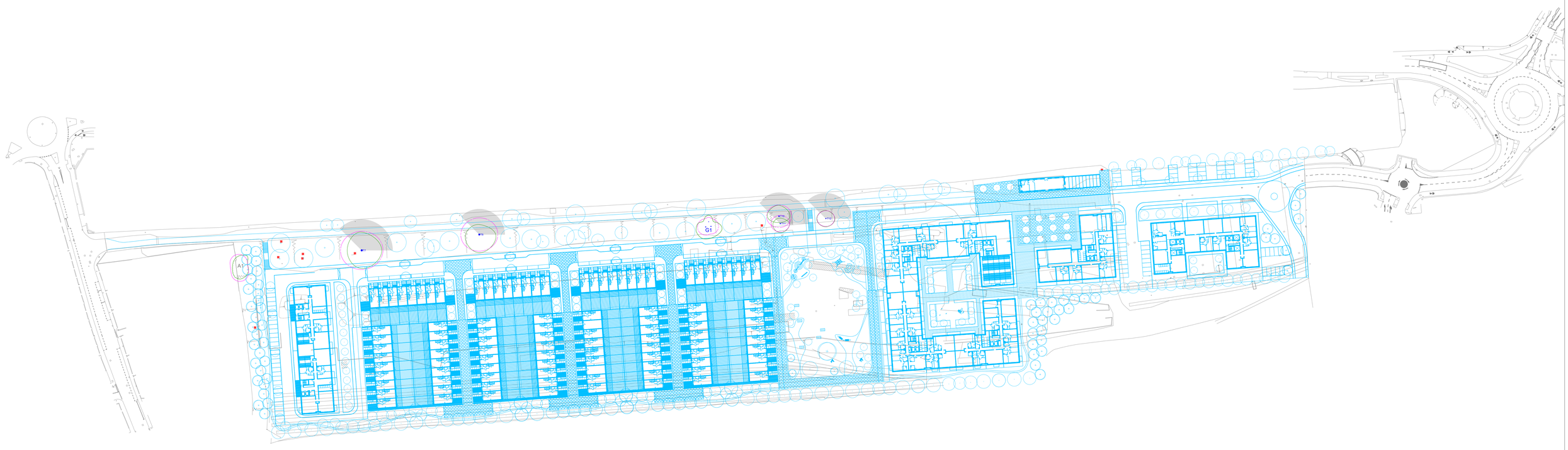

Key

- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Crown spread
- Root protection area
- BS5837:2012 shade path
- Trees to remove to enable development
- Proposed development footprint
- Indicative development tree planting
- Construction exclusion zone
- Braced Heras fencing (see AGS101)
- High-visibility barrier fencing (see AGS105)
- Root pruning line (see AGS 403)

Drawing Title:

Tree Constraints Plan (Devt Detail) Master

Location:

Exmouth Junction Exeter

Date:	Drawing Number:	Revision:
12.04.2019	THA279/0219	1.0
Scale:	Paper Size:	Drawn By:
1:750	A0	TH

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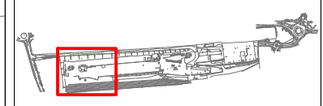
Key

- T_n Category A tree
- T_n Category B tree
- T_n Category C tree
- T_n Category U tree
- Crown spread
- Root protection area
- BS5837:2012 shade path
- Trees to remove to enable development
- Proposed development footprint
- Indicative development tree planting
- Construction exclusion zone
- Braced Heras fencing (see AGS101)
- High-visibility barrier fencing (see AGS105)
- Root pruning line (see AGS 403)

N

Location Inset



Drawing Title:

Tree Location Plan Inset 1

Location:

Exmouth Junction
Exeter

Date:	Drawing Number:	Revision:
12.04.2019	TH/A279/0219	1.0
Scale:	**Paper Size:**	**Drawn By:**
1:500	A3	TH

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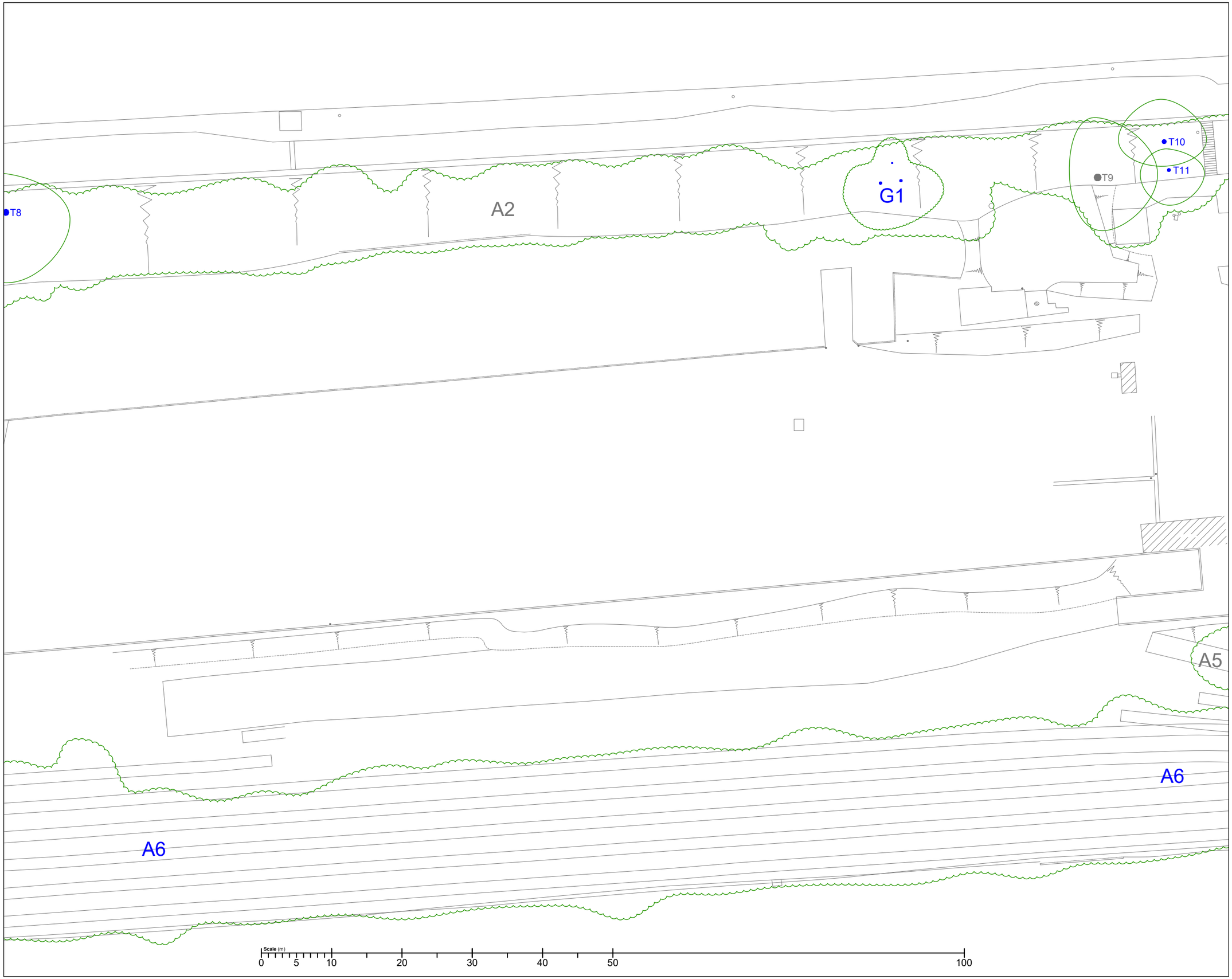
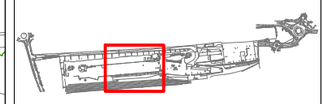


Key

- Tn Category A tree
- Tn Category B tree
- Tn Category C tree
- Tn Category U tree
- Crown spread
- Root protection area
- BS5837:2012 shade path
- Trees to remove to enable development
- Proposed development footprint
- Indicative development tree planting
- Construction exclusion zone
- Braced Heras fencing (see AGS101)
- High-visibility barrier fencing (see AGS105)
- Root pruning line (see AGS 403)

N

Location Inset



Drawing Title:

Tree Location Plan Inset 2

Location:

Exmouth Junction
Exeter

Date:	Drawing Number:	Revision:
12.04.2019	TH/A279/0219	1.0
Scale:	**Paper Size:**	**Drawn By:**
1:500	A3	TH

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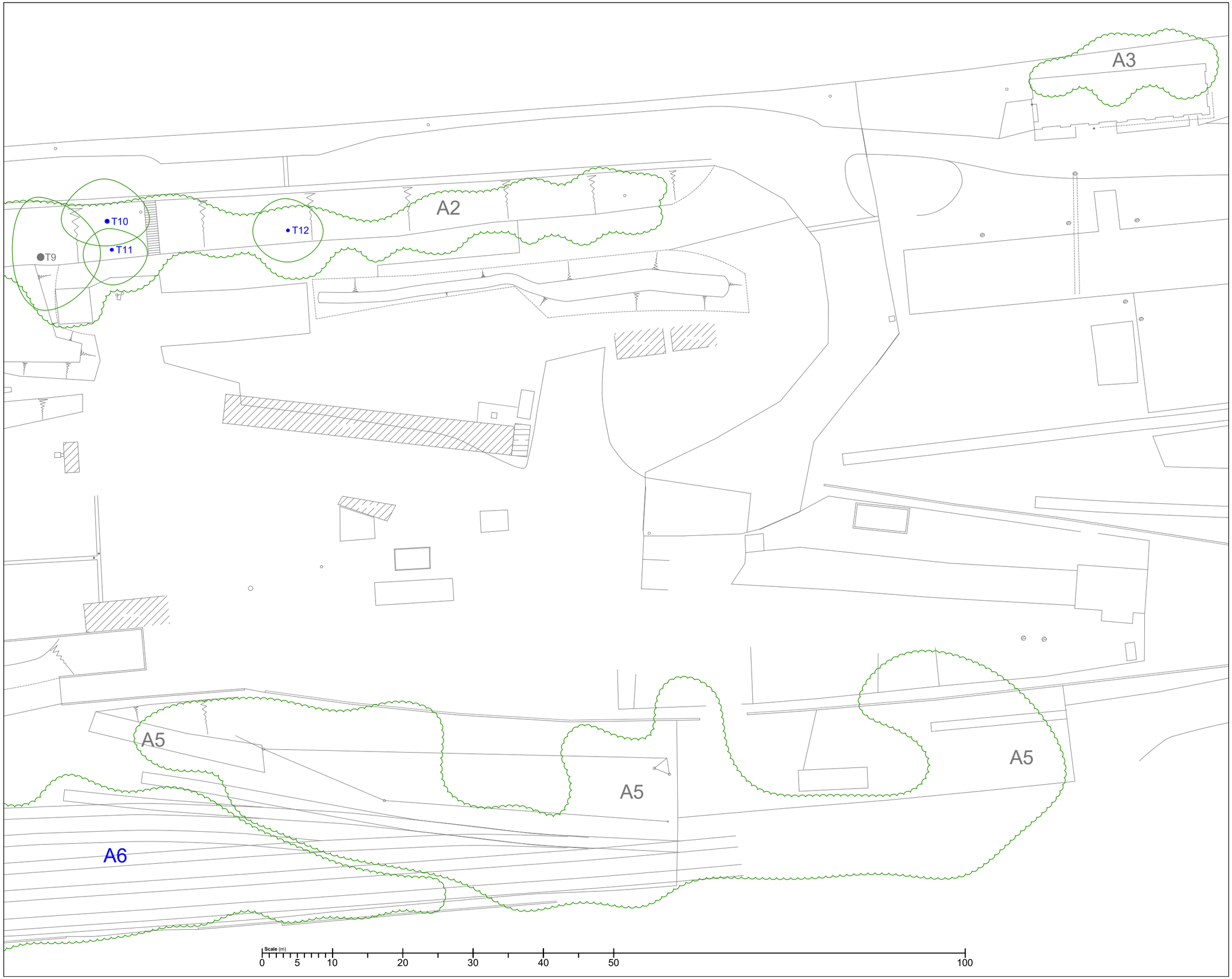
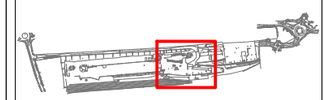


Key

- Tn Category A tree
- Tn Category B tree
- Tn Category C tree
- Tn Category U tree
- Crown spread
- Root protection area
- BS5837:2012 shade path
- Trees to remove to enable development
- Proposed development footprint
- Indicative development tree planting
- Construction exclusion zone
- Braced Heras fencing (see AGS101)
- High-visibility barrier fencing (see AGS105)
- Root pruning line (see AGS 403)

N

Location Inset



Drawing Title:
Tree Location Plan Inset 3

Location:
Exmouth Junction
Exeter

Date:	Drawing Number:	Revision:
12.04.2019	TH/A279/0219	1.0
Scale:	**Paper Size:**	**Drawn By:**
1:500	A3	TH

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A3

A4

T13

A5

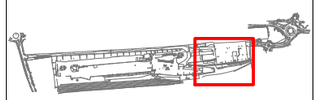
Scale (m)
0 5 10 20 30 40 50 100

Key

- Tn Category A tree
- Tn Category B tree
- Tn Category C tree
- Tn Category U tree
- Crown spread
- Root protection area
- BS5837:2012 shade path
- Trees to remove to enable development
- Proposed development footprint
- Indicative development tree planting
- Construction exclusion zone
- Braced Heras fencing (see AGS101)
- High-visibility barrier fencing (see AGS105)
- Root pruning line (see AGS 403)

N

Location Inset



Drawing Title:
Tree Location Plan Inset 4

Location:
Exmouth Junction
Exeter

Date:	Drawing Number:	Revision:
12.04.2019	TH/A279/0219	1.0
Scale:	**Paper Size:**	**Drawn By:**
1:500	A3	TH

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