GENERAL

1. IF THIS DRAWING HAS BEEN RECEIVED ELECTRONICALLY IT IS THE RECIPIENTS RESPONSIBILITY TO PRINT THE DOCUMENT TO THE CORRECT SCALE.
2. ALL DIMENSIONS ARE IN (m) UNLESS OTHERWISE NOTED.
3. ALL LEVELS ARE IN METRES ABOVE DATUM UNLESS OTHERWISE NOTED.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL THE RELEVANT ENGINEERS', SERVICES ENGINEERS, MANUFACTURERS & ARCHITECTS DRAWINGS AND SPECIFICATIONS.

LEGEND:

- SITE BOUNDARY LINE
- EXISTING BUILDING
- PROPOSED SURFACE WATER SEWER
- PROPOSED GATIC CAST SLOT
- PROPOSED GATIC SLOT DRAIN OUTLET
- RG PROPOSED ROAD GULLY
- EXISTING SURFACE WATER SEWER
- EXISTING DRAINAGE CHANNEL
- PROPOSED FOUL SEWER
- FG PROPOSED FOUL GULLY

UTILITY LINETYPES

Air Line, British Telecom, British Telecom Overhead, CCTV / Cable Television, Communication Cable, Drainage - Combined Water, Drainage - Foul Water, Drainage - Storm Water, Earth Cable, Empty Duct, Electric Cable, Electric Low Voltage, Electric High Voltage, Electric Overhead, Fibre Optic, Fuel, Fuel Diesel, Fuel Petrol, Gas Line, Gauge Line, GPR Line, Heating Pipes, Multiple Services Route, Offset Fills, Oil Pipe, Rising Main, Telecom, Traffic Light Signals, Unknown, Vapour Recovery, Vent Line, Water

NEW GULLIES TO BE INSTALLED OUTSIDE FOOTPATH FOOTPRINT IN EXISTING DOCK LEVELLER AREA. EXISTING CONNECTION POINTS FROM EXISTING GULLIES INTO MAIN DRAINAGE NETWORK TO BE MAINTAINED. EXISTING GULLY POTS TO BE REUSED IF PRACTICAL

ALL EXISTING RWPS AND CONNECTIONS INTO SURFACE WATER DRAINAGE NETWORK TO BE RETAINED AND BOXED OUT AS REQUIRED IN AREA OF NEW FOOTPATH

EXISTING BUILDING

EXISTING BUILDING

El Sub Sta

El Sub Sta

El Sub Sta

Tank

93.9m

S02 MH CATCHPIT CL 98.255 IL 97.481

S01 MH CATCHPIT CL 99.390 IL 97.700

S03 MH CATCHPIT CL 98.90 IL 97.292

S13 MH CL 96.750 IL 95.639

EX MH CL 96.54 IL 95.27

EX 450Ø SWS LINE

EX 225Ø SWS LINE

EX 375Ø SWS LINE

NEW GATIC CASTSLOT 300mm D400 AND SLOT DRAIN OUTLET CONNECTION TO S13 MH

NEW 225Ø PIPE TO CONNECT INTO EXISTING 225Ø SURFACE WATER NETWORK. EXISTING PIPE IL AND LOCATION TO BE CONFIRMED PRIOR TO CONSTRUCTION

TEMPORARY CONNECTION TO EXISTING 225mmØ SURFACE WATER DRAINAGE

NEW GATIC CASTSLOT 300mm D400

S05 MH CATCHPIT CL 102.400 IL 101.900

S04 MH CATCHPIT CL 100.560 IL 96.922

S06 MH BACKDROP CATCHPIT CL 101.450 IL 96.593

S07 MH CATCHPIT CL 99.850 IL 96.374

S08 MH CATCHPIT CL 99.700 IL 96.316

S10 MH BACKDROP CATCHPIT CL 99.34 IL 96.05

EX 225Ø SWS LINE

PROPOSED SPEL PURACEPTOR P250/1CSC CLASS 1 FULL RETENTION SEPARATOR OR SIMILAR APPROVED.

PROPOSED AQUACELL PLUS-R GEOCELLULAR STORAGE (50m x 8m x 1.2m DEEP) OR SIMILAR APPROVED. VOLUME = 456m³

S12 MH TO EX SWS CL 97.90 IL 95.90(TBC)

S09 MH CATCHPIT CL 98.350 IL 96.630

S11 MH HYDROBRAKE (MD-SHE-0123-7300-1200-7300 FLOW=7.3l/s HEAD=1.2m CL 96.34 IL 96.00

NEW OUTLET BOX AND CONNECTION INTO EXISTING SURFACE WATER DRAINAGE NETWORK TO BE PROVIDED ON EXISTING SLOT DRAIN

NEW GATIC CASTSLOT 300mm D400 SLOT DRAIN WITH CONNECTION INTO EXISTING SURFACE WATER DRAINAGE NETWORK

CONTRACTOR TO ALLOW FOR NEW MANHOLE AND SEWER DIVERSION TO EXISTING SURFACE WATER SEWER

FOUL GULLY TO BE PROVIDED IN BIN STORE AREA

FOUL DRAIN DOWN GULLIES TO BE PROVIDED TO PUMP HOUSE AND SPRINKLER TANKS. ANY ADDITIONAL FOUL DRAIN DOWN POINTS AROUND THE BUILDING LINE TO BE CONFIRMED BY M&E ENGINEER

EX 100Ø FWS LINE

EXISTING CULVERT

PROPOSED DRAINAGE LAYOUT
SCALE: 1 : 500 @ A0

DRAINAGE NOTES

1. All private drainage works are to be carried out in accordance with BS EN 752:2017 and Building Regulations 2010 Part H.

2. All drainage works to comply with 'Design & Construction Guidance - Sewer Sector Guidance Appendix C' published by Water UK .

3. All connections to existing public sewers to be in accordance with and to the satisfaction of the Local Authority.

4. Concrete protection (bedding class 'Z') to pipework to be provided as follows;
(i) all pipework within soft areas with a cover of less than 500mm.
(ii) all pipework beneath roads, car parks and all other trafficked hardstanding areas with a cover less than 1200mm.
(iii) all pipework adjacent to existing and proposed trees/dense vegetation in landscaped areas.
An expansion joint shall be provided at all joint locations.

5. All below ground foul drainage from within building footprint to be 100mm dia. unless noted otherwise. All below ground drainage from road gullies to be 150mm dia. unless noted otherwise.

6. All pipework in manholes are to be laid soffit to soffit unless noted otherwise. All chamber invert levels, shown on the drawing, are for the outgoing pipe.

7. All internal drainage to be to Architect's and M&E Engineer's drawings and details.

8. For setting out of foul and rainwater outlets refer to the Architect's drawings. Contractor is responsible for all coordination of pipework on site.

9. This drawing to be read in conjunction with all other relevant Engineer's and Architect's drawings, specifications and documentation.

10. The position and invert levels of all existing drains, sewers and manholes to be confirmed by the contractor prior to the commencement of the proposed works and any discrepancies reported immediately to EirEng Consulting Engineers.

11. All pipes are to have a class 'S' bed and surround unless noted otherwise (see note 4 above).

12. All concrete pipes are to be high strength and to be in accordance with BS EN 1916 and BS 5911.

13. All vitrified clay pipes are to be in accordance with BS EN 295.

14. Drainage channels, slot drains and catchpits to be designed by specialist manufacturer for critical storms of 75mm rainfall depth, to suit site conditions and in accordance with load class requirements as shown on the plan. Location of all rodding access, inspection chambers and outlets to be as per specialist manufacturers design. Design to be submitted for comment to EirEng Consulting Engineers prior to ordering.

15. All external finished levels and manhole cover levels shown on this drawing are indicative and subject to adjustment on site to suit the finished ground levels. All existing manhole covers to be amended to suit finished ground levels and converted to trafficable where required including manhole build up and surround.

16. All levels are in metres and all dimensions are in millimetres unless noted otherwise.

17. Any coordinates provided for manholes or inspection chambers are relevant to the centre of the manhole.

18. A CCTV drainage survey is to be carried out both at the pre-commencement of construction and at the completion of the contract to prove the integrity of the as-built drainage systems. At the completion of the contract this is to be carried out prior to the issue of the practical completion certificate.

19. Sewers, manholes, gullies, channel drains, slot drains and catchpits should be inspected at 6 monthly intervals and cleaned out at 12 monthly intervals. A full CCTV survey should also be carried out at 10 yearly intervals. Refer also to specialist drainage channel, petrol interceptor, pumping station and treatment plant manufacturers information and maintenance requirements. In all instances, inspection and cleaning should be carried out only by a specialist contractor and in accordance with the guidelines given in `Safe Working in Sewers and at Sewage Works' published by National Joint Health and Safety Committee for the Water Services.

20. All covers to be in accordance with BS EN124 and the following load class;
- F900 - Service Yards
- D400 - Carriageways, Service Roads and Car Parks. Class F900 cover to be used if located in direct wheel track on service roads.

21. Contractor to allow for underground utility survey of existing site foul and surface water drainage network to confirm information provided. Survey to be carried out and issued to EirEng Consulting Engineers at the outset of works.

22. Petrol Interceptors to be installed to manufacturers requirements and must comply with BS EN 858:1 and BS EN 858:2 with appropriate silt capacity and oil & water level monitor and alarm systems. All vent pipes for interceptors to be 110mm dia. and terminate 2.4m above ground, location to Architects details.

23. Petrol Interceptors located in trafficable areas must be installed with a reinforced concrete slab beneath pavement finish designed to take vehicle loading.

24. Contractor to allow for dewatering during excavation works due to groundwater expected at a depth of approx. 1m bgl.

REV	DATE	BY	DESCRIPTION
PL5	04.11.21	PH	PLANNING ISSUE
PL4	22.08.21	LL	PLANNING ISSUE
PL3	17.08.21	PH	PLANNING ISSUE
PL2	13.08.21	PH	PLANNING ISSUE
PL1	09.08.21	PH	PLANNING ISSUE

REVISIONS

CLIENT
LYSANDER

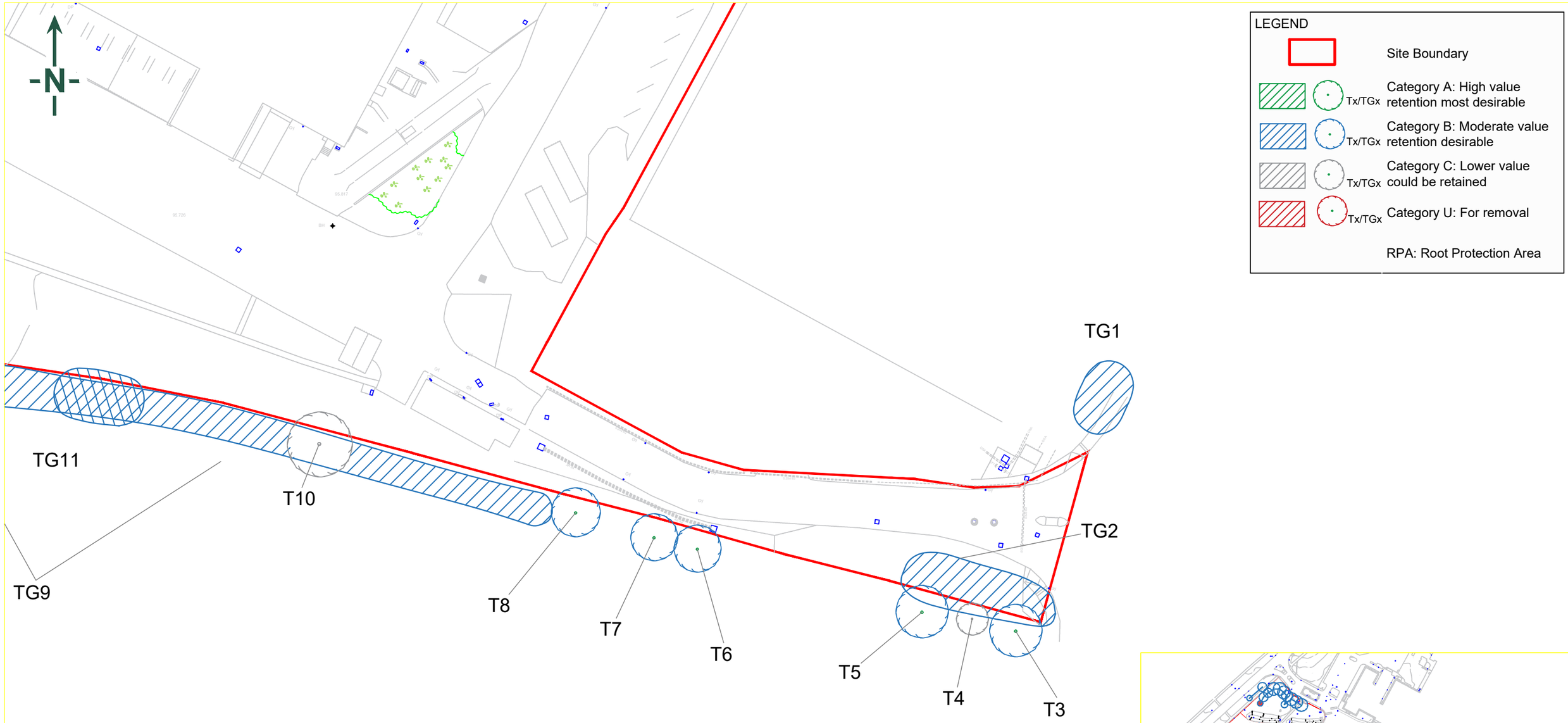
PROJECT TITLE
BANBURY 200
SOUTHAM ROAD
BANBURY

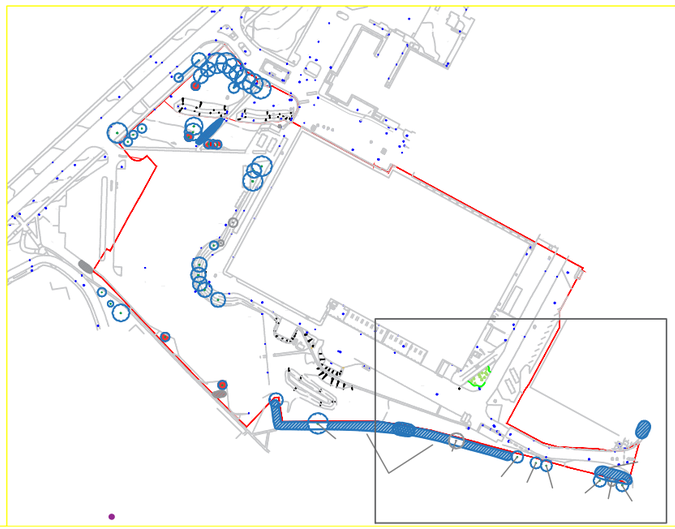
DRAWING TITLE
PROPOSED DRAINAGE LAYOUT

eIReNG CONSULTING ENGINEERS
48a Patrick Street, Dun Laoghaire, Co.Dublin, Ireland.
Tel: +353 1 6638957 Email: info@eireng.ie

DRAWN BY: P Herangi	DATE: 09-08-2021
ENG CHECK: M Allen	DATE: 09-08-2021
APPROVED: E Deasy	DATE: 09-08-2021
SCALE: 1:500	SHEET: A0
STATUS: PLANNING	
JOB NO.: 212088	DRAWING NUMBER: C002
	REVISION: PL5

Appendix Aa-d – Tree Survey



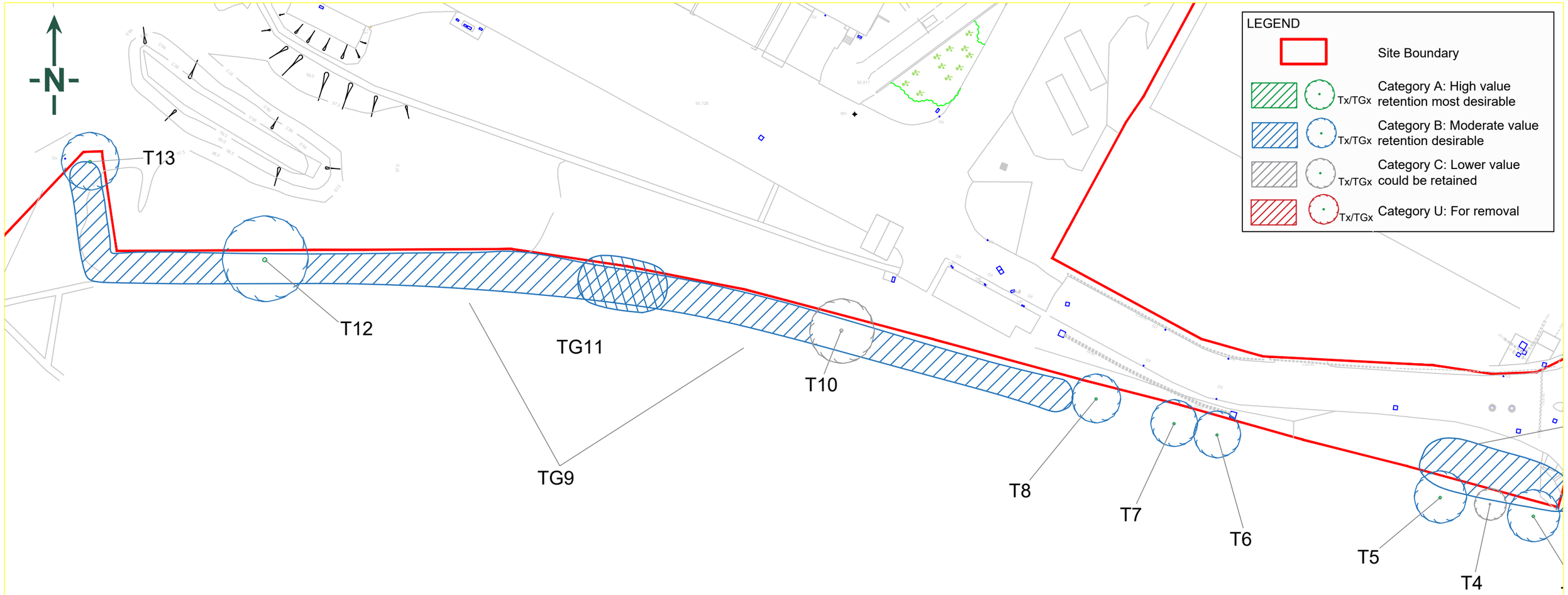


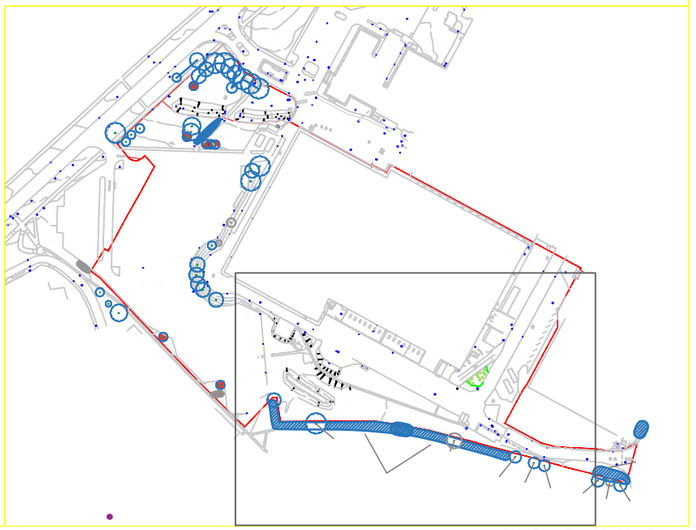
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Tree Survey
Banbury 200, Southam Road
Banbury

DRAWN BY: KE	SCALE: Not to Scale	PROJECT NO: 21-1553.02
CHECKED BY: CB	REVISION: 1	FIGURE NO: Appendix Aa
DATE: 12 August 2021		



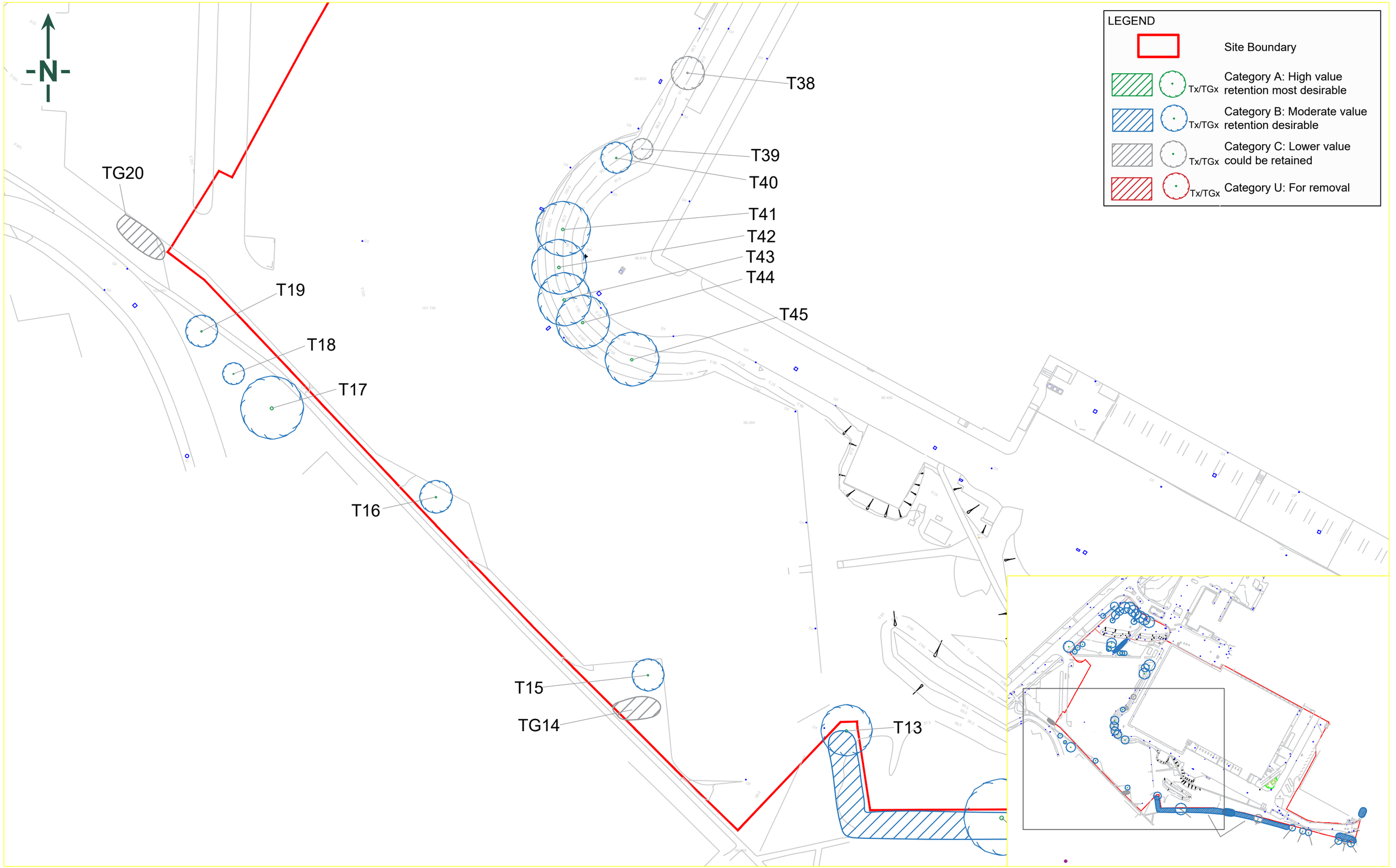


Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Tree Survey
Banbury 200, Southam Road
Banbury

DRAWN BY:	SCALE:	PROJECT NO:
KE	Not to Scale	21-1553.02
CHECKED BY:	REVISION:	FIGURE NO:
CB	1	Appendix Ab
DATE:		
12 August 2021		

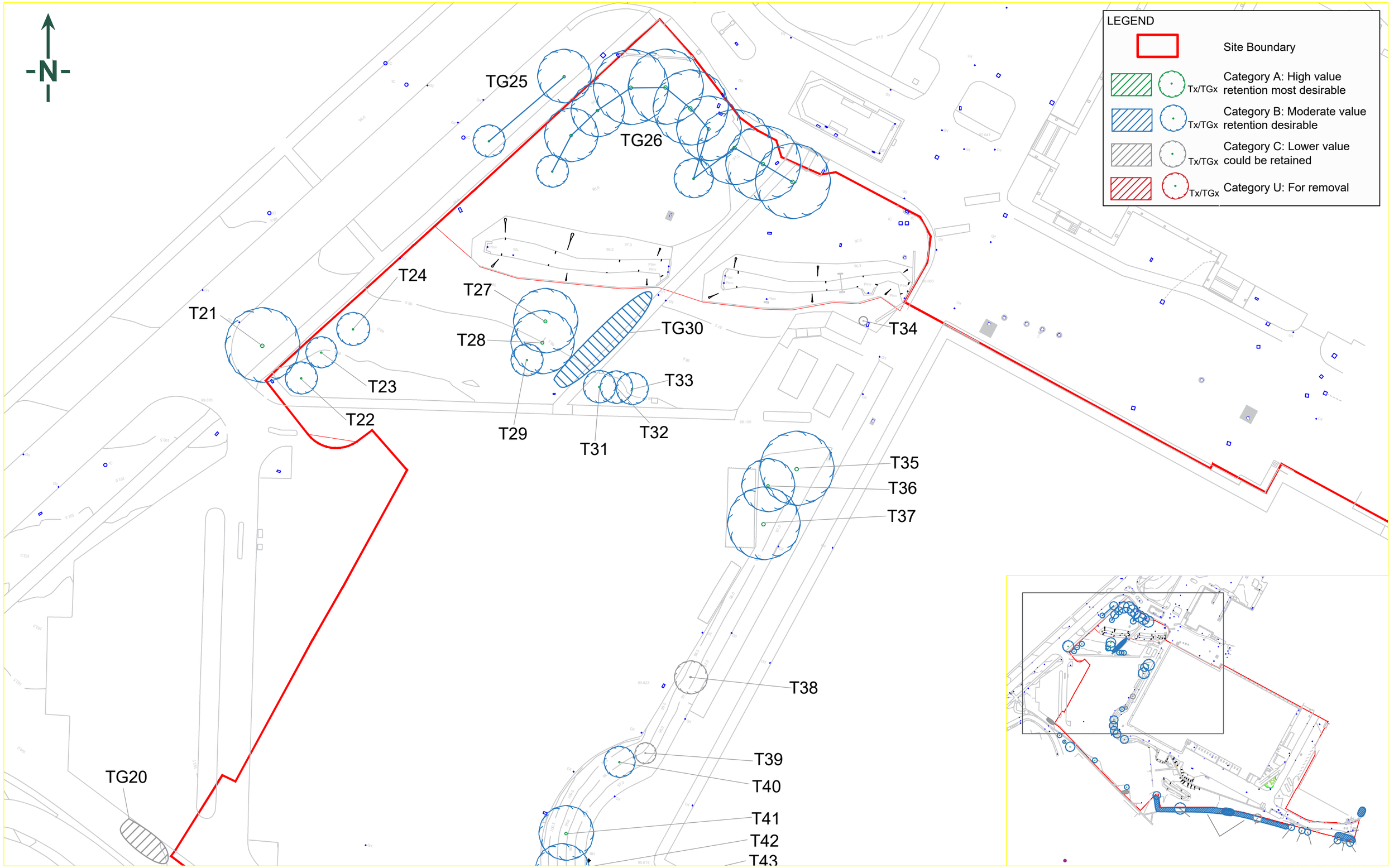


Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Tree Survey
Banbury 200, Southam Road
Banbury

DRAWN BY: KE	SCALE: Not to Scale	PROJECT NO: 21-1553.02
CHECKED BY: CB	REVISION: 1	FIGURE NO: Appendix Ac
DATE: 12 August 2021		



Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Tree Survey
Banbury 200, Southam Road
Banbury

DRAWN BY: KE	SCALE: Not to Scale	PROJECT NO: 21-1553.02	
CHECKED BY: CB	REVISION: 1	FIGURE NO: Appendix Ad	
DATE: 12 August 2021			

Appendix B – Tree Schedule

Table 1 – BS 5837:2012 Tree Schedule

	Tree Species		Measurements					Crown (m)				Tree Condition								Management
Tree Number	Common Name	Latin Name	Maturity	Height (m)	Stems	Stem Diameter (mm)	Average Height	N	E	S	W	Roots	Stem	Crown	Comments	Structural	Life Expectancy (yrs)	Category	RPA (m)	Works
TG1	Lime	*Tilia* sp.	SM	Av. 12	S	Av. 300	2	4	4	4	4	No visual defects	Single stem, vertical	Canopy reads as one	Part of a larger group along Southern Road	F	>40	B2	3.6	
TG2	Sycamore Lime	*Acer pseudoplatanus* *Tilia* sp.	SM	Av. 15	S / MS	Av. 450	Av. 4	6	6	3	4	No visual defects	Single stems or multi-stemmed below 1 m, vertical	Canopy reads as one, limited to south due to off-Site trees	Sparse ivy cladding over stems	F	20-40	B2	5.4	Sever ivy
T3	Lombardy poplar	*Populus nigra* 'Italica'	M	25	S	900	6	3	5	0	1	No visual defects	Single stem, vertical. Minor bark damage at base of stem to south	Compact, narrow canopy	Close to footpath and fence and borders footpath	F	>40	B2	10.8	
T4	Sycamore	*Acer pseudoplatanus*	SM	14	S	325	8	3	3	3	3	No visual defects	Single stem, slight lean to north and bifurcates at 2 m	Canopy previously lifted to 8 m, sparse	Close to boundary fence and borders footpath	P	20-40	C2	3.9	
T5	Lombardy poplar	*Populus nigra* 'Italica'	M	25	S	875	14	3	2	2	2	No visual defects but growing close to footpath and boundary fence	Single stem, vertical	Compact, narrow canopy	Close to boundary fence and borders footpath	F	>40	B2	10.5	
T6	Lombardy poplar	*Populus nigra* 'Italica'	M	25	S	1300	6	3	3	3	4	No visual defects, growing close to footpath to south and new gabion basket to north	Single stem, vertical	Compact, narrow canopy	Ivy previously severed at 2 m	F	>40	B2	15.0	
T7	Lombardy poplar	*Populus nigra* 'Italica'	M	25	S	1050	6	3	3	3	4	No visual defects, growing close to footpath to south and new gabion basket to north	Single stem, vertical	Compact, narrow canopy	Previously crown lifted to 6 m to south	F	>40	B2	12.6	
T8	Lombardy poplar	*Populus nigra* 'Italica'	M	25	S	1350	4	5	5	5	4	No visual defects, growing close to footpath to south and new gabion basket to north	Single stem, vertical	Compact, narrow canopy	Previously ivy clad but severed at 2 m	F	>40	B2	15.0	
TG9	Hawthorn Field maple Holly	*Crataegus monogyna* *Acer campestre*	Y/SM	Av. 6	S / MS	Av. 250	1	2	2	2	2	No visual defects but in places ivy covers the	Single and multi-stemmed specimens, most are	Canopy reads as one, heavy ivy cladding	Occasional larger specimens present, self-	F	20-40	B2	3.0	Sever and remove ivy

	Cherry Rowan Ash Elder	*Ilex aquifolium* *Prunus* sp. *Sorbus aucuparia* *Fraxinus excelsior* *Sambucus nigra*									ground limiting visibility	vertical but a minority lean north	and coverage throughout	set immature trees amongst group					
T10	Ash	*Fraxinus excelsior*	SM	15	S	625	5	6	5	5	4	No visual defects	Single stem, vertical. Leans north-east.	Rounded, balanced canopy	Damage present on stem from ground to 1 m creating cavity and fungal growth present.	P	<20	C2	7.5	
TG11	Ash	*Fraxinus excelsior*	SM	16	S / M S	Av. 600	4	8	8	8	8	No visual defects but growing close to adjacent path	Western tree, single stem leans west. Central bifurcated and base and eastern tree leans north-east	Previously crown lifted to 4 m	Ivy clad stems. Ivy previously severed to 3 m on eastern stem. Central tree largest at 600 x 2 DBH. Scattered deadwood at base.	F	20-40	B2	7.2	
T12	Ash	*Fraxinus excelsior*	M	18	M S	Est. 700 x 3	4	8	8	8	8	No visual defects but growing close to adjacent path	Trifurcated at base, vertical	Balanced canopy, scattered deadwood and ivy cladding present	Thick ivy cladding and potential obscuring of features. Scattered deadwood at base.	F	20-40	B2	14.4	
T13	Field maple	*Acer campestre*	SM	10	M S	Est. 400 x2, 300 x2	2	5	5	5	5	No visual defects	Multi-stemmed below 1 m, vertical	Spreading crown, balanced	Northern tree in group of smaller trees	F	20-40	B2	8.4	
TG14	Yew Willow Ash	*Taxus baccata* *Salix* sp. *Fraxinus excelsior*	Y	6	S / M S	Est. Av. 75	1	1	1	1	1	Not visible amongst scrub	Yew multi-stemmed, willow single stems	Canopies limited due to surrounding bramble scrub		F	20-40	C2	0.9	
T15	Whitebeam	*Sorbus aria*	SM	10	S	475	3	4	4	4	4	No visual defects	Single stem, vertical	Rounded, balanced canopy	Located in kerbed planting area	F	20-40	B2	5.7	
T16	Whitebeam	*Sorbus aria*	SM	10	S	425	3	4	4	4	4	No visual defects, concrete strip 2 m to south	Single stem, vertical	Rounded, balanced canopy	Tag 003281	F	>40	B2	5.1	
T17	Leyland cypress	*X Cuprocypari s leylandii*	M	16	M S	Est. 500 x 2	0	6	6	6	6	No visual defects, growing close to garden	Multi-stemmed below 1 m, vertical	Canopy lifted to 7 m to east over garden, low and spreading to west at ground level	Located in grass verge at edge of residential estate	F	20-40	B2	8.4	

T18	Maple	*Acer sp.*	SM	10	S	325	3	3	3	3	3	Minor surface roots noted with former mower damage	Single stem, vertical	Rounded, balanced canopy	Located in grass verge at edge of residential estate	F	>40	B2	3.9	
T19	Maple	*Acer* sp.	SM	12	S	425	3	4	4	5	5	Minor surface roots noted with former mower damage	Single stem, vertical	Rounded, balanced canopy	Located in grass verge at edge of residential estate	F	>40	B2	5.1	
TG20	Elder Cherry	*Sambucus nigra Prunus* sp.	SM	8	S	Est. 300	0	3	3	3	3	No visual defects	Not visible amongst ivy but anticipated to be single stems, vertical	Canopy reads as one, heavily congested with ivy	Located in grass verge at edge of residential estate	F	20-40	C2	3.6	
T21	Maple	*Acer* sp.	SM	14	S	550	5	6	6	6	6	Raised roots noted surrounding tree and raised tarmac to east	Single stem, vertical	Rounded, balanced canopy. Previously crown lifted to 5 m to east.	Street tree	F	>40	B2	6.6	
T22	Silver birch	*Betula pendula*	SM	18	S	450	6	5	5	5	5	No visual defects	Single stem, vertical	Rounded, balanced canopy. Previously lifted to south to 4 m.		F	20-40	B2	5.4	
T23	False acacia	*Robinia pseudoacacia*	SM	18	S	450	5	5	5	4	4	No visual defects	Single stem, vertical. Epicormic growth at base.	Rounded, balanced canopy	Split on previously removed branch at 3 m to east. Tag 003258	F	>40	B2	5.4	
T24	False acacia	*Robinia pseudoacacia*	SM	18	S	Est. 600	4	5	5	5	5	Raised root to north-west with mower damage	Single stem, vertical	Rounded, balanced canopy	Tag 003257	F	>40	B2	7.2	
TG25	Maple	*Acer* sp.	SM	14	S	Av. 425	4	5	5	5	5	Minor surface roots	Single stems, vertical	Rounded, balanced canopies	Roadside trees	F	>40	B2	5.1	
TG26	Cherry London plane	*Prunus* sp. *Platanus x hispanica*	SM	Av. 14	S / MS	Av. 475	3	5	5	5	5	Minor surface roots	Mostly single stems, cherries split by 1.5 m	Rounded, balanced canopies	Southern most cherry fallen north, still living	F / P	>40	B2	5.7	Remove fallen tree
T27	False acacia	*Robinia pseudoacacia*	SM	16	S	600	5	6	8	8	8	Minor raised roots to south-east	Single stem, vertical	Rounded, balanced canopy	Tag 003242	F	>40	B2	7.2	
T28	False acacia	*Robinia pseudoacacia*	SM	16	S	475	8	7	7	4	4	Raised root to south with previous mower damage	Single stem, vertical	Canopy limited by T26 and T28	Tag 003243	F	>40	B2	5.7	
T29	Maple	*Acer* sp.	SM	15	S	300	3	3	3	3	3	No visual defects	Single stem, vertical	Compact, balanced canopy	Tag 003244	F	>40	B2	3.6	
TG30	Leyland cypress	*X Cuprocypari s leylandii*	SM	10	S	Est. 250	0	1	1	1	2	No visual defects, close to footpath	Single stems, vertical	Canopy reads as one, managed as hedgerow with	Linear group along edge of path	F	20-40	B2	3.0	

													lower 3 m to east cut in line with fence						
T31	Silver birch	*Betula pendula*	Y	14	S	225	4	3	3	3	3	No visual defects	Single stem, vertical	Compact canopy, limb removed at 3 m south	Tag 003291	F	>40	B2	2.7	
T32	Silver birch	*Betula pendula*	SM	16	S	350	4	5	5	5	5	No visual defects	Single stem, vertical	Rounded balanced canopy interconnected with T32. Previous limb removal at 4 m to south-east	Tag 003292	F	20-40	B2	4.2	
T33	Hornbeam	*Carpinus betulus*	SM	14	S	425	1	6	6	3	4	No visual defects	Single stem, vertical. Minor bark damage at 20 cm to west, sap visible to north at 1 m. Epicormic growth at base.	Canopy limited by T31 to west	Tag 003293	F	>40	B2	5.1	
T34	Cherry	*Prunus* sp.	Y	6	MS	100 x2	1	2	2	2	2	Growing at edge of building	Bifurcated at base, vertical	Canopy limited by building to 2 .5 m west	Self-set	P	<20	C2	1.8	
T35	London plane	*Platanus x hispanica*	SM	14	S	475	3	6	6	6	6	No visual defects	Single stem, vertical	Rounded, balanced canopy	Thin ivy cladding on main stem	F	>40	B2	5.7	
T36	Sycamore	*Acer pseudoplatanus*	Y	14	S	375	4	4	4	3	5	No visual defects	Single stem, vertical	Rounded, balanced canopy. Previously crown lifted to 4 m.	Limited canopy due to T1 and T3. Tree tag 003287	F	>40	B2	4.5	
T37	London plane	*Platanus x hispanica*	SM	14	S	600	3	7	7	7	7	No visual defects	Single stem, vertical	Rounded, balanced canopy, previously crown lifted to 4 m to east	Thin ivy cladding on main stem	F	>40	B2	7.2	
T38	Field maple	*Acer campestre*	Y	8	S	325	3	3	3	3	3	Exposed surface roots, particularly to the east	Single stem, vertical	Rounded, balanced canopy	Tree tag 003295	F	20-40	C2	3.9	
T39	Ash	*Fraxinus excelsior*	Y	8	S	150	4	3	2	1	2	No visual defects	Single stem, vertical	Sparse canopy	Tree tag 003296	P	20-40	C2	1.8	
T40	Norway maple	*Acer platanoides*	Y	8	S	275	3	4	4	4	4	Surface roots present on all aspects	Single stem, vertical	Rounded, balanced canopy	Tree tag 003297	F	20-40	B2	3.3	
T41	London plane	*Platanus x hispanica*	Y	8	MS	175 x 2, 200, 250	3	5	5	5	5	Surface roots visible to north and east	Multi-stemmed at 1 m	Spreading canopy, balanced	Tree tag 003298	F	20-40	B2	4.8	

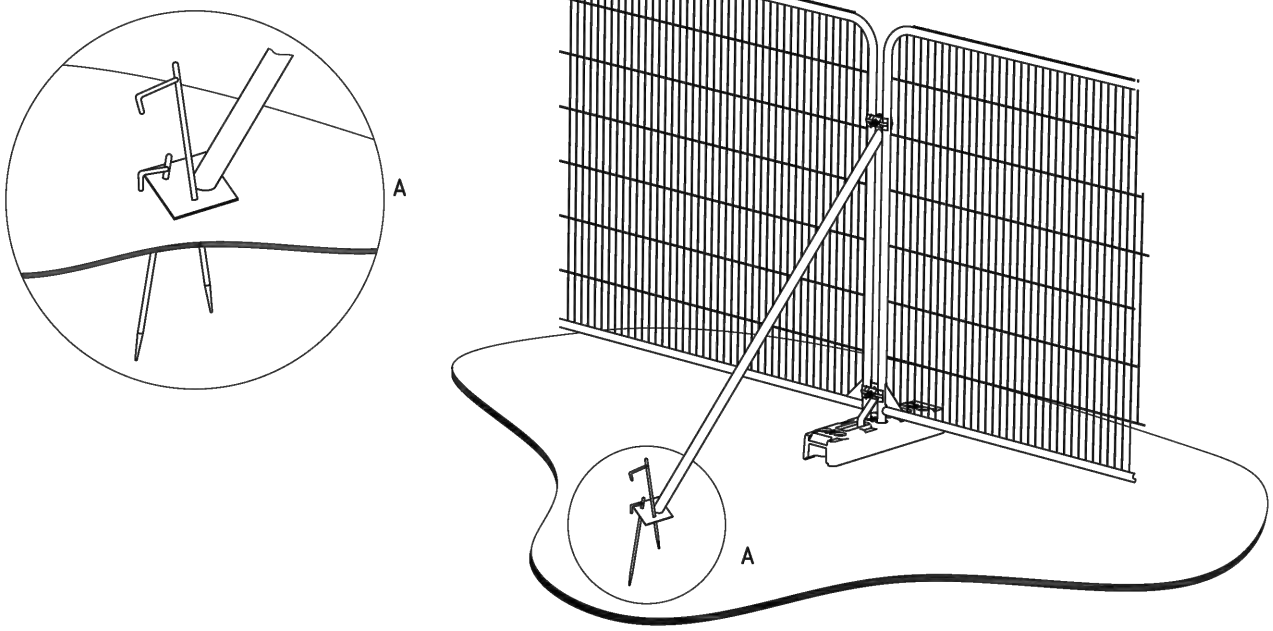
T42	Norway maple	*Acer platanoides*	Y	8	S	300	3	4	4	4	4	Surface roots present down the slope to north-east	Single stem, vertical	Rounded, balanced canopy	Tree tag 003299	F	20-40	B2	3.6	
T43	Norway maple	*Acer platanoides*	Y	8	S	350	2	4	4	4	4	Surface roots present to the east	Single stem, vertical	Rounded, balanced canopy	Tree tag 003300	F	20-40	B2	4.2	
T44	Ash	*Fraxinus excelsior*	Y	9	S	300	2	3	3	3	3	No visual defects	Single stem, vertical	Narrow canopy balanced	Tree tag 003301. Minor ivy cladding to stem base.	F	20-40	B2	3.6	
T45	Norway maple	*Acer platanoides*	Y	10	S	325	2	4	4	4	4	Exposed surface roots down slope to north	Single stem, vertical	Rounded, balanced canopy	Tree tag 003302	F	20-40	B2	3.9	

Table 2 – Key to Tree Schedule

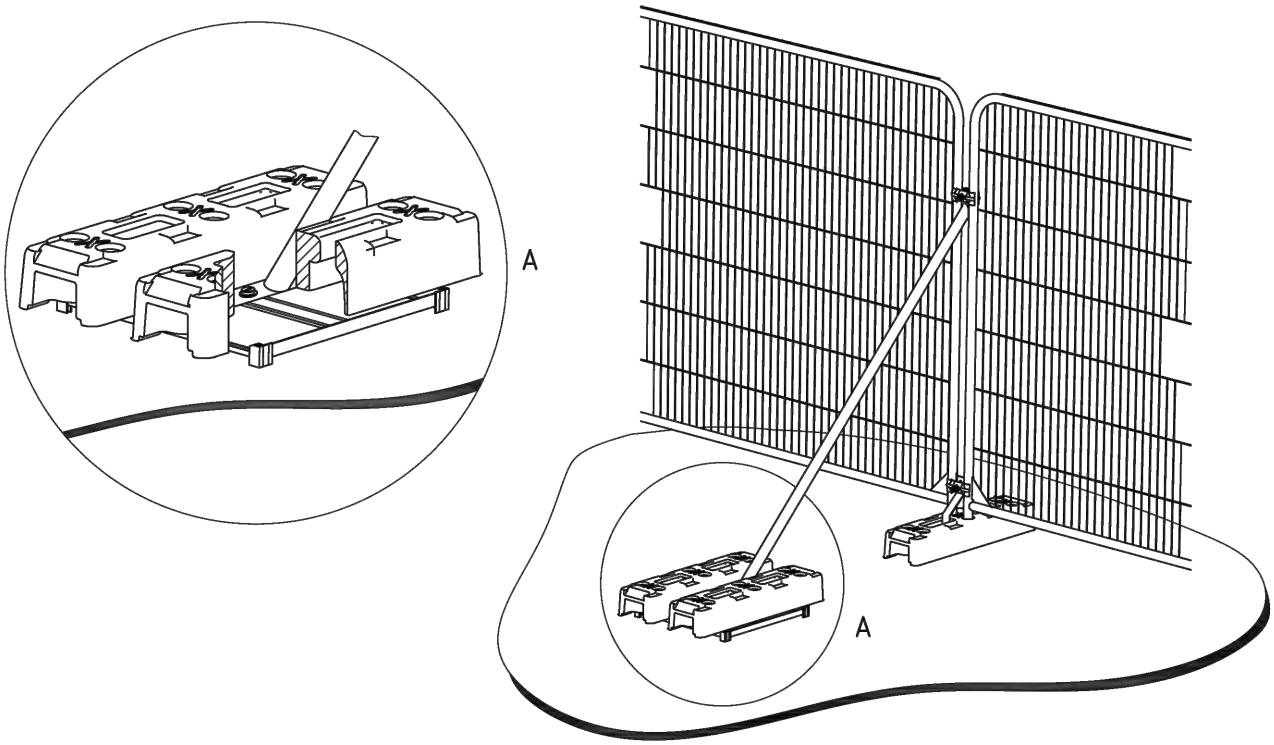
Measurements	Age – Class	Overall Condition	BS 5837 2005 : Cascade Chart for Quality Assessment/Retention Category	Symbols:
MS – Multi-stemmed	Y - Young	G – Good	A – High	**<** = less than
Ht - Height in metres	SM – Semi-Mature	F – Fair	B – Moderate	**~** = approximately
Stem – Stem Diameter at 1.5m in mm	EM – Early-mature	P – Poor	C – Low	**>** = greater than
Crown – Crown spread in metres	M – Mature	D – Dead	R – Trees for Removal	
TD - Trunk division (height in metres)	V - Veteran **Est Yrs –** estimate of years remaining (>40 years; 20 –40 years; <20 years)		**Sub-categories:** **1** = mainly arboricultural values **2** = mainly landscape values **3** = mainly cultural values.	
RPA = Root Protection Area (equivalent to a circle with a radius 12 x the stem diameter for single stem trees and 10 x the basal diameter for trees with more than one stem arising below 1.5m above ground level).				

Appendix C – Tree Protection Barriers

Examples of Above Ground Stablizing System



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix D – CEZ Warning Sign

– TREE PROTECTION AREA –
KEEP OUT!

(TOWN & COUNTRY PLANNING ACT 1990)
THE TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS, THE CONTRAVENTION OF WHICH MAY LEAD TO CRIMINAL PROSECUTION.
THE FOLLOWING MUST BE OBSERVED BY ALL PERSONNEL:

- Δ **THE PROTECTIVE FENCING MUST NOT BE MOVED**
- Δ **NO PERSON SHALL ENTER THE CONSTRUCTION EXCLUSION ZONE**
- Δ **NO MACHINE, PLANT OR VEHICLES SHALL ENTER THE EXCLUSION ZONE**
- Δ **NO MATERIALS SHALL BE STORED IN THE EXCLUSION ZONE**
- Δ **NO SPOIL SHALL BE DEPOSITED IN THE EXCLUSION ZONE**
- Δ **NO EXCAVATION SHALL OCCUR IN THE EXCLUSION ZONE**
- Δ **NO FIRES SHALL BE LIT IN THE EXCLUSION ZONE**

ANY INCURSION INTO THE EXCLUSION ZONE MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Appendix E – Example of Ground Protection

Example of Ground Protection

Using TERRAM GEOCELL for tree root protection ensures the roots beneath are protected from vehicle loads by confining the sub-base and stabilising the ground. When the permeable TERRAM GEOCELL is filed with a porous, no fines, free-flowing aggregate the system allows essential passage of air and water providing essential nutrients to the roots. TERRAM GEOCELL is ideal for "No-Dig" situations.

Typical Applications

- Permanent Woodland Trails
- Paths & Cycleways
- Driveways*
- Roads
- Access Routes*
- Parking Areas

**See Arboricultural Advisory and Information Services APN12: Driveways close to trees*

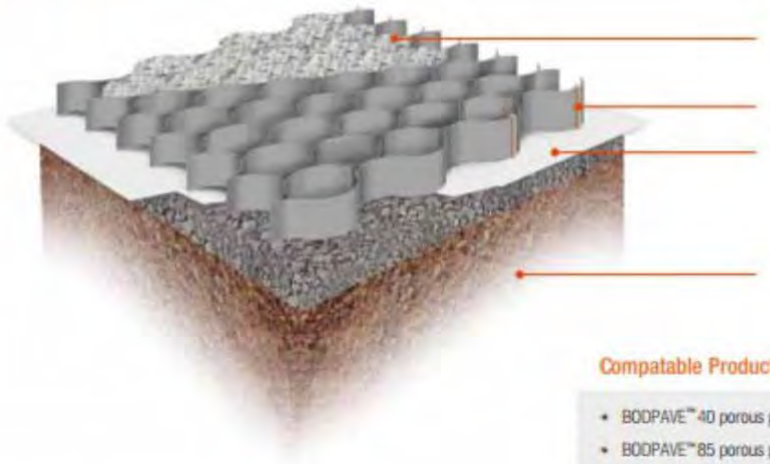
TERRAM GEOCELL is supplied as flat packed panels which are opened to form the honeycomb-like structure. These are positioned and pinned to the ground using fixing pins and filled with a suitable, permeable infill.

TERRAM GEOCELL confines the infill and ensures that downward forces are spread laterally, reducing pressure on the sub-base. Without this cellular system, the surface would become rutted and compacted with the traffic loads, damaging the tree roots and potentially resulting in the death of the tree.

WHY TERRAM GEOCELL?

- Lightweight and easy to handle reducing installation costs.
- Permeable geotextile allows free flow of water, essential in tree root applications.
- The flexible TERRAM geotextile material allows TERRAM GEOCELL to effectively adapt to any variations in the terrain.
- TERRAM GEOCELLS are easily cut to size without damage, therefore reducing cost.

Typical Profile



Compatable Products

- BODPAVE™ 40 porous pavers
- BODPAVE™ 85 porous pavers
- TRUCKPAVE™
- TERRAM geotextile filter
- Geogrid

Fixing Pins

Fixing pins available upon request.

Product Details

PRODUCT	PANEL SIZE (m)	CELL Dia & DEPTH (mm)	PANEL WEIGHT	TYPICAL LOADING
GEOCELL 25/10	5 x 7	250 dia x 100	17kg	Pedestrian cycle*
GEOCELL 25/15	5 x 7	250 dia x 150	25kg	Light vehicles*
GEOCELL 22/20	5 x 3	220 dia x 200	20kg	Optimum for heavier vehicles or more frequent traffic*

* These are typical profiles only.

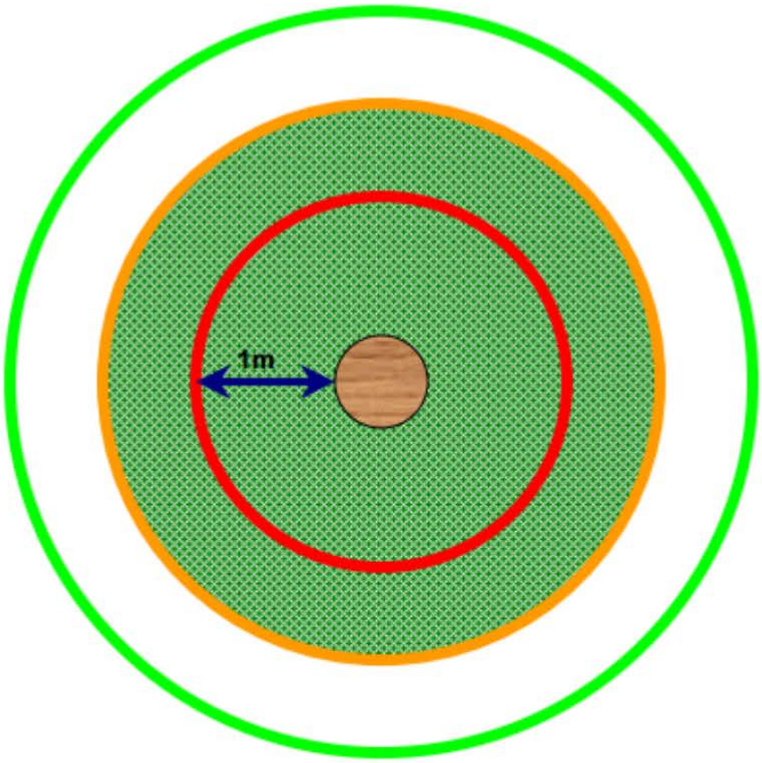
Appendix F – NJUG Volume 4

NJUG Volume 4

The National Joint Utilities Group

NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

FIGURE 1 – Tree Protection Zone



Key

Trunk of tree

Canopy or branch spread

PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with the local authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.

PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with the local authority Tree Officer if in any doubt.

PERMITTED ZONE – outside of the precautionary zone. Excavation works may be undertaken within this zone, however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

DAMAGE TO TREES

Tree roots keep a tree healthy and upright. Most roots are found in the top 600mm of soil and often grow out further than the tree's height. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil. Most street tree roots grow under the footway but may also extend under the carriageway. If roots are damaged the tree may suffer irreversible harm and eventually die.

PROTECTING ROOTS - DO'S and DON'TS

There are three designated zones around a tree each of which has its own criteria for working practices.

THE PROHIBITED ZONE

Don't excavate within this zone.

Don't use any form of mechanical plant within this zone

Don't store materials, plant or equipment within this zone.

Don't move plant or vehicles within this zone.

Don't lean materials against, or chain plant to, the trunk.

Do contact the local authority tree officer or owner of the tree if excavation within this zone is unavoidable.

Do protect any exposed roots uncovered within this zone with dry sacking.

Do backfill with a suitable inert granular and top soil material mix as soon as possible on completion of works.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PRECAUTIONARY ZONE

Don't excavate with machinery. Where excavation is unavoidable within this zone excavate only by hand or use trenchless techniques.

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Don't repeatedly move / use heavy mechanical plant except on hard standing.

Don't store spoil or building material, including chemicals and fuels, within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do backfill the trench with an inert granular material and top soil mix. Compact the backfill with care around the retained roots. On non highway sites backfill only with excavated soil.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PERMITTED ZONE

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Do use caution if it is absolutely necessary to operate mechanical plant within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

Appendix G – AMS Reporting Form

Technical Note

Project:	Banbury 200, Southam Road, Banbury	**Job No:**	21-1553.02
Subject:	Arboricultural Inspection Visit	**Report Date:**	
Author:	Peter Morrell	**Inspection:**	

Date of Inspection

1.0 Results

2.0…Actions to be taken

3.0 Photographs

Date of next visit –

Distribution

Tree Officer	
Site Engineer	
Site Manager	
Job File	**21-1553.02**