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The Cambourne to Cambridge Order

Transport and Works Act 1992
Transport and Works (Inquiries Procedure) Rules 2004
Inquiry into:
THE CAMBOURNE TO CAMBRIDGE ORDER

APPENDICES

of

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Barrell Tree Consultancy

On behalf of Cambridgeshire County Council

8th August 2025

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Appendix 1

Tree Survey Plan

Tree survey - 25024-TSV-01

Cambourne to Cambridge TWAO Guided Busway

Scale @ A1 1:500

01020304050 m

Provided drawings

Topo: (2024-04-11) Copy topo source from incoming drawings folder

Tree types

T = Tree, G = Group, H = Hedge, W = Woodland, AW = Ancient woodland, V = Veteran

A and B tree root protection area boundaries

C tree root protection area boundary

Indicative crown spread

A
TX

BS category A (High quality)

B
TX

BS category B (Moderate quality)

TX C

BS category C (Low quality)

TX U

BS category U (Unsuitable for retention)

Survey extent

Tree	Species	Category	Nominal RPA radius (m)	Height (m)
T1	Bramley apple	U	7.2	2
T2	Bramley apple	A	7.8	5
T3	Bramley apple	A	7.8	5
T4	Bramley apple	A	7.5	5
T5	Bramley apple	A	8.4	5
T6	Bramley apple	A	6.6	4
T7	Bramley apple	A	6.3	5
T8	Bramley apple	A	6.9	5
T9	Bramley apple	A	8.7	5
T10	Bramley apple	A	7.8	5
T11	Bramley apple	A	7.2	5
T12	Bramley apple	A	9.6	4
T13	Bramley apple	A	7.8	4
T14	Bramley apple	C	5.1	4



Tree survey schedule



NOTE: Colour annotation is A & B trees with green background; C & U trees with blue background.

Tree no	Species	Height (m)	Diameter (cm) @ 1.5 m	Category	Notes	Crown spread (m) N, E, S, W	BS5837 RPA radius (m) 12x diameter	Veteran Tree Buffer radius (m) 15x diameter	Veteran Tree Buffer radius 5 m beyond crown spread
T1	Bramley apple	2	60	U	Stump, elder growing within				
T2	Bramley apple	5	65	A	Hollow stem, Innonotus hispidus present, branch hollowing, deadwood and decay from pruning wounds	4.6, 6.2, 6.1, 2	7.8	9.8	11.2
T3	Bramley apple	5	65	A	Hollow stem and main branches, old Innonotus bracket present	5, 5.5, 4.9, 4.9	7.8	9.8	10.5
T4	Bramley apple	5	62.5	A	Stem hollowing, main branches decayed wounds and hollowing, old Innonotus bracket present	6.1, 5.2, 6.2, 4.3	7.5	9.4	11.2
T5	Bramley apple	5	70	A	Decay present, old Innonotus bracket on branches, stem intact, branch hollowing to nw and se	5.7, 5.2, 4.9, 4.7	8.4	10.5	10.7
T6	Bramley apple	4	55	A	Hollow stem, longitudinal crack down stem, branch decay and hollowing	4.3, 4.1, 3.2, 3.3	6.6	8.3	9.3
T7	Bramley apple	5	52.5	A	Suppressed by hedge to west, hollow stem and main branches	5.7, 5.3, 5.8, 1	6.3	7.9	10.8
T8	Bramley apple	5	57.5	A	Old Innonotus bracket on branches, branch hollowing from old wounds, hollowing stem, swelling at stem base	6.3, 5.3, 5.1, 5.2	6.9	8.6	11.3
T9	Bramley apple	5	72.5	A	Old Ganoderma sp bracket on stem, hollowing stem and main branches, decay at branch ends, suppressed by hedge and shrubs to west	5, 6, 3, 1	8.7	10.9	11
T10	Bramley apple	5	65	A	Branch hollowing, decay at pruned ends, woodpecker holes	4.2, 4.7, 5.1, 6.1	7.8	9.8	11.1
T11	Bramley apple	5	60	A	Southern branch dead and failed, hollow stem, decay at pruning wounds, hollowing branches	5.1, 1, 5, 4.3	7.2	9	10.1
T12	Bramley apple	4	80	A	Hollow stem and main limbs, pruning wounds decaying, holes and deadwood	6.2, 3.8, 3.2, 3	9.6	12	11.2
T13	Bramley apple	4	65	A	Hollow stem and branches, failed lateral branches, extensive decay and deadwood	4.5, 5, 6, 1	7.8	9.8	11
T14	Bramley apple	4	42.5	C	Significant dead branches due to suppression by adjacent by hedge, probable replacement tree, it is much smaller than others	4.2, 5.2, 5.5, 2	5.1	7.7	10.5

Notes:

Veteran Tree Buffers. The current government standing advice in <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions> states "For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area."

Ruskins Outline Translocation Methodology



CAMBOURNE TO CAMBRIDGE
TRANSLOCATION OF 3 VETERAN APPLE TREES
OUTLINE METHODOLOGY

1.0 These three Apple trees (T6, T7 & T8) are all within the 53-58 cm trunk diameters, we are fully confident of transplanting these specimens successfully, with the optimum lead time of three years (root prune Autumn 25, again in Autumn 26 and transplant Autumn 27). After which they are supported by competent monitoring and aftercare, whilst they re-grow their roots to their original sizes. It is anticipated that this will take around 10 years.

1.1 Ruskins has extensive experience transplanting large Apples and fruits due to our work with Orthodox Jews in North London. Their belief that to harm a fruit tree is the same as harming a man, ensures we transplant a steady stream of fruit trees from their gardens, to facilitate building works. Our teams are therefore very familiar with the root systems of Malus and find that the roots tend to lack the extent of typical fibrous element of most plants.

When transplanting Malus a greater level of care is deployed. These recommendations are currently based on images of the trees only and our current understanding of the soils.

1.2 A site visit is required and to confirm the methodology a root investigation, which could be undertaken in conjunction the first root prune. This will inform us as to the root systems of these trees, which in turn will influence the rootball size and could alter the root pruning recommendations.

Root pruning stimulates root growth inside the rootball, allowing a higher percentage of root mass to be transplanted. In addition it spreads the stress of root severance out over 3 events and reduces the energy spent on repairing and defending pruning cuts.

It also allows the mulching of these trees, to boost the Mycorrhizal activity by upto 15 times (that of the current grass coverage), boost the Soil Biology by adding organic matter as it composts down, moderates soil temperature, stops the sun from baking the top of the rootball (killing the Soil Biology in this area), suppresses weeds, retains moisture and keeps mowers and trimmers away from the trunk.

The team will also apply Soil Biology during root pruning, to help these trees by ensuring their roots are associating with soil Biology as nature intended. This will help make the trees more resilient and healthier.

The BRIX level of each tree will be monitored and boosted if required by applying complex sugars.



1.3 At present it is assumed that the rootballing team will incrementally wrap the rootballs in hessian and rootballing wire. Zeolite (micro porous habitats for microbes, 75% empty 25% with 9 of the best Mycorrhizal Fungi and 16 of the most optimal Soil Bacteria strains) will be located under the hessian and within the backfill. Each section will be faced with Air Pot. This will stimulate fibrous root growth along with a build up for resources in the roots (triggered by the air pruning). Also it prevents root girdling or over watering.

The impeded drainage is noted from the soil investigation and the leaving open this area, may not be desirable if it fills with water. If this occurs, the rootball may be wrapped in root barrier.

1.4 Over the spring and summers between root prunes and upto transplanting the trees will need to be competently monitored and cared for. Ruskins can undertake this, but would also be willing to train and support others. The provision of a water supply to the donor (and final) area would greatly assist the delivery of aftercare. This could be automated to reduce the burden further (and controlled by moisture sensors to further ease watering). The trees are likely to produce epicormic growths, in a response to root pruning, which should be regularly removed.

1.5 With regard to the reduction of canopies, this is usually undertaken to reduce the sail effect of the canopies with a reduced rootball or to correct an imbalance that also risks the tree leaning. The aim is to firstly undertake this after a full summer of photosynthesis, but also to avoid having to attend to pruning cuts on roots and within the canopy, at the same time. Any pruning is undertaken so not to simulate both un-natural branch unions from pruning cuts and regular pruning to correct these.

1.6 After root pruning the trees will be completely islanded and wrapped in Air Pot. At this stage we have assumed the method of lifting will be a 50t excavator with a bespoke cutting blade. This will driven underneath the rootball. The tree will be secured to the blade, it will be lifted, carefully transported and planted into a pre-excavated pit. There is lifting only from underneath and no lifting occurs on the trunk. Our methodologies do not necessitate a metal bar through the trunk. The rootball is not affected by the lifting/transporting/planting.

If this method is deemed unsuitable, due either to the tree (roots) or the soil, a floor of pipe will be driven under, this will be secured over the rootball. The trees will either be dragged (on the floor, not the rootball or trunk) on a pipe road to their new locations or if within the arc of the crane, lifted from the floor into their new locations.

1.7 The planting sites, will have been tested for their similarity to the donor sites. The planting pits will be perc tested and if deemed necessary soil ph & health will be tested. The trees will be carefully placed in the planting pits, probably planted slightly raised. They will be secured with underground and overhead duckbill guys. With aim of removing the overhead guys after 3 winters and cutting the underground and removing from across the top of the rootball a couple of years later.



Aeration/Irrigation pipes with four vertical capped pipes, will be wrapped around the rootballs. The backfill will be mainly spoil with some of the adjoining (un-excavated) soil from the donor sites, plus peat free compost (with a 3 year natural fertilising effect), the zeolite and water storing polymer. The rootball and immediate area outside will be drenched with Compost Tea. The trees will be mulched, with composted whole tree mulch to one metre passed their rootballs.

A drip irrigation system will be installed around each tree. Ideally this is controlled by moisture sensors to only provide water when the soils need it. For this a low voltage electrical supply will be need in addition to a water supply. There is also the option to have an automated system which is controlled by a manually adjusted timer.

1.8 The trees will need assistance establishing for around 10 years, whilst their roots re-grow to their former size. As the trees establish the level of aftercare is reduced. The aftercare is primarily competent monitoring and watering. The mulch should be topped up annually and applications of Soil Biology should occur three times a year for the first two years.

It is likely that the trees will produce more epicormic growth than normal. As this diverts energy from the canopy, this should be regularly removed.

Ruskins can train and support others to undertake the aftercare, however it is recommend that Ruskins undertake this for the first two years.

1.9 A photographic record will be maintained over each tree from fixed points NSEW, from the first site visit till the end of aftercare (and ideally for decades after). In addition annual extension growth will be recorded. BRIX levels will be recorded in spring and summer. Each visit, including aftercare will generate a brief report (of works, comments on trees and images).

Email from Genome Campus

From: Lee Outhwaite <[REDACTED]>
Sent: Thursday, July 4, 2024 4:25 PM
To: Aldington, Ollie <[REDACTED]>
Subject: Re: Mulberry Tree condition [EXT]

Hi Ollie

Many thanks for your email.

I can confirm the tree is still alive and well and continuing to go through all its seasonal changes without any ill effects from the move.

The fruiting of the tree has been so successful that one of our restaurants picks the fruit and uses them for meals on site.

We've had no limbs dropping and no dieback so, the preparation that Civic Trees carried out was obviously done so well.

I have no photographs on me right now but, I will get some sent over to you.

Thank you again. If I can be any more help then please let me know

Many thanks
Lee

On 4 Jul 2024, at 16:11, Aldington, Ollie <[REDACTED]> wrote:

Hi Lee,

I'm an employee at WSP UK and am interested in the current condition of a mulberry tree on your campus.

I was directed to you by the reception and was hoping to get some recent pictures of the mulberry tree and maybe a short description of its overall health (no worries if not).

We are interested in the mulberry tree as we understand it has been relocated in the past by Civic Trees, so we are interested in the success of the project.

Really appreciate any information you can give me.

Many thanks,

Ollie

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-LAEmHhHzdJzBITWfa4Hgs7pbKI

Genome Research Limited, a charity registered in England with number 1021457 and a company registered in England with number 2742969, whose registered office is Wellcome Sanger Institute, Wellcome Genome Campus, Hinxton, CB10 1SA.

Moving a 100 year old Black Mulberry Tree



Moving a 100-year-old Black Mulberry Tree

The Wellcome Trust approached Civic Trees to find out about moving a large 100-year-old black Mulberry tree at their Genome Campus near Cambridge.

The tree was positioned in the courtyard of the conference centre and needed to be relocated to a new accommodation block, aptly named Mulberry Court. The proposed new location mirrored the tree's original sheltered surroundings.

Civic Trees has expertise in large, complex tree transplanting and it was clear that moving the tree was viable logistically. However exploratory works were also needed and so, in 2012, a process of root pruning and investigative air spade work was undertaken to determine the tree's root composition.

The general manager of Civic Trees, explains: "Following the root

pruning, the tree came into leaf the following spring and was inspected for signs of stress and weakness in the rootball structure. This inspection was positive."

He added that the tree was in a conservation area so relocating it also required the approval of English Heritage and the Local Tree Officer.

To prepare the tree for the move it was fitted with Civic Tree's unique Newman Frame.

A 500 tonne crane and associated trackway was laid and rigged to lift the tree from the conference centre and deposit it onto a low loader.

Once the tree was lifted by the crane and placed on the lorry, it was a short drive down the road to its new location, where a smaller 250 tonne crane was waiting. This crane lowered the tree into its newly prepared tree pit and then

underground and overhead anchoring systems were used to secure the tree in its new home.

The general manager comments: "Mature tree transplanting requires specialist arboricultural knowledge, experience, skills and equipment that very few companies in the UK can offer. This mulberry tree is thought to be around 100 years old and there are only a few in the country that are as old as this, however it should flourish in its new surroundings for many years to come."

The Genome Campus is set in the idyllic grounds of the Hinxton Hall estate, south of Cambridge. The Campus plays host to scientific research, courses and conferences, and a publicly-accessible nature reserve.

Draft Arboricultural Method Statement and Tree Protection Plan



Arboricultural method statement

Cambourne to Cambridge TWAO – Trees at Coton Orchard

Chris Allder MSc HNDArb FARborA MICFor RCarborA



8th August 2025

25024-AMS-CA

Site location and report purpose

Site location



This aerial image is provided courtesy of Google. The yellow line shows the approximate site boundary and is illustrative only.

Report purpose

This arboricultural method statement describes how trees will be protected and managed during the construction of the new guided busway in proximity to several veteran apple trees at Coton Orchard, Coton. Its purpose is to explain how and when the protection measures should be installed, and how they will be maintained for the duration of the development activity.

More specifically, the construction work are set out in a Transport and Works Act Order application made by the Greater Cambridge Partnership for a public transport route linking Cambourne to Cambridge. The proposed works include a dedicated busway serving communities in Cambourne and the proposed Bourn Airfield development, as well as in Hardwick, Coton and the West Cambridge campus. An emergency and maintenance access track (service track) will run alongside the busway, also providing a path for pedestrians and cyclists and, for the majority of the route, horse riders.

This report includes:

- A draft **Tree protection plan** illustrating relevant tree details, the location of the proposed construction, and the proposed tree protection measures.
- A draft **Arboricultural method statement** (section 1 of the report) describing how retained trees will be protected and managed during the development activity.
- **Appendices (Appendix 1** – Background administrative information and data collection; **Appendix 2** – Tree schedule and explanatory notes; **Appendix 3** – QR Codes for SGNs).
- A companion document to supplement the main report titled **Manual for managing trees on development sites (Version 3.0)**, which provides explanations of how retained trees will be managed on site in the form of Site Guidance Notes (SGNs) covering the relevant issues.

1: Arboricultural method statement

1.1 Site Guidance Notes (SGNs)

This arboricultural method statement identifies which trees on this site will be protected and managed, and by what means. This site-specific summary is supplemented by more detailed explanations and descriptions of specific operations set out in the accompanying *Manual for managing trees on development sites*. That document is a compilation of 12 individual SGNs addressing the following tree protection and management issues that regularly arise in the construction phase of development:

- SGN 1 *Monitoring tree protection* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-1-Monitoring-V3.pdf>)
- SGN 2 *Fencing protected trees* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-2-Fencing-V3.pdf>)
- SGN 3 *Ground protection* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-3-Ground-Protection-V3.pdf>)
- SGN 4 *Pollution control* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-4-Pollution-V3.pdf>)
- SGN 5 *Site cranes & piling rigs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-5-Cranes-Rigs-V3.pdf>)
- SGN 6 *Height restrictions* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-6-Height-V3.pdf>)
- SGN 7 *Excavating in RPAs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-7-Excavation-in-RPAs-V3.pdf>)
- SGN 8 *Removing surfacing and structures in RPAs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-8-Removing-Surfaces-V3.pdf>)
- SGN 9 *Installing/upgrading surfacing in RPAs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-9-Installing-Surfacing-V3.pdf>)
- SGN 10 *Installing structures in RPAs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-10-Structures-V3.pdf>)
- SGN 11 *Installing services in RPAs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-11-Services-V3.pdf>)
- SGN 12 *Landscaping in RPAs* (<https://www.barrelltreecare.co.uk/assets/Uploads/SGN-12-Landscaping-V3.pdf>)

NOTE: Each individual SGN can be downloaded by using the links above and the QR Code links in Appendix 3.

1.2 Identification of areas to be protected

The tree protection plan shows the areas where protective measures are necessary. The fencing location is shown by the heavy black dashed lines, with the construction exclusion zone behind as the lighter black diagonal hatch. Where appropriate, precautionary areas are shown by a yellow fill.

1.3 Arboricultural supervision

An arboricultural consultant will be appointed to advise on the tree management for the site and to attend:

- a pre-commencement meeting before any work starts;

1: Arboricultural method statement

- regular supervision visits to oversee the agreed tree protection, as agreed at the pre-commencement meeting; and
- further supervision visits, as necessary, to oversee any unexpected works that could affect trees.

The detail of how the arboricultural supervision will be carried out is explained in SGN 1 *Site monitoring* in the accompanying Manual.

1.4 Table 1: Summary of the site operations requiring arboricultural input

For this site, arboricultural input will be needed for the following operations:

Brief operation summary	Trees affected	Location of detailed explanations
Pre-commencement meeting: Meeting on site with all parties to agree protective measures, as described in SGN 1. <u>Will be carried out before any significant site works begin.</u>	All trees	SGN 1 <i>Monitoring tree protection</i>
Personnel briefing and dissemination of pertinent material: Details of the AMS and associated works will be made available to all site personnel.	All trees	Arboricultural Method Statement Ruskins Method Statement
Supervision schedule and reporting: To be agreed with the controlling authority. Frequency of visits, watching brief, process for response and site attendance to be clarified. Reporting process determined.	All trees	Arboricultural Method Statement
Access facilitation works: Contractor will carry out the agreed works as described in Appendix 1. <u>Will be completed before any significant site works begin.</u>	Retained trees as necessary	Appendix 3
Installing fencing and ground protection: Agreed tree protection measures will be installed and checked, as described in SGN 2 and SGN 3. <u>Will be completed before any significant site works begin.</u>	Fencing all trees Ground protection for trees	Tree protection plan, SGN 2 <i>Fencing protected trees</i> , and SGN 3 <i>Ground protection</i>
Root pruning and preparation of trees to be translocated: Agreed methodology by Ruskins to be followed.	T6, T7, T8	Ruskins Method Statement
Pollution control near retained trees: Any pollution control measures identified during risk assessment will be installed as described in SGN 4. <u>Will be completed before any potential pollutants arrive on site.</u>	All trees	SGN 4 <i>Pollution control</i>
Regular arboricultural supervision: Provision will be made to carry out and record agreed arboricultural supervision, as described in SGN 1.	All trees	SGN 1 <i>Monitoring tree protection</i>
Excavating in RPAs: These operations will be carried out as described in SGN 7.	T5, T6, T7, T8, T9, T10	SGN 7 <i>Excavating in RPAs</i>
Landscaping in RPAs: These operations will be carried out with care, as described in SGN 12.	All trees	SGN 12 <i>Landscaping in RPAs</i>

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Brief operation summary	Trees affected	Location of detailed explanations
Removing tree protection: <u>Protection can only be removed when there is no risk of damage to retained trees.</u>	All trees	SGN 1 <i>Monitoring tree protection</i>

The operations summarised in this table, and supplemented by the more detailed explanations set out in the SGNs, the rest of this document, and the tree protection plan form the arboricultural method statement for this site. The Site Manager will ensure that its details and any agreed amendments are known and understood by all site personnel. Copies of the agreed documents will be available on site. All personnel who could have an impact on trees will be briefed on the specific tree protection requirements as part of the site induction procedures. This requirement will be written into the site management documentation.

More specifically, we clarify the following:

1. **Translocation of T6, T7 and T8:** These three trees will be moved to a new location. The translocation process has been set out by Ruskins, who will manage and undertake the works. The Ruskins outline methodology sets out the following steps;
 - Ground investigations to determine soil characteristics and root distribution. First root prune will be carried out in conjunction with these initial ground investigations.
 - Mulch rootball surface
 - Apply bespoke treatment to boost soil biology
 - Monitor health and irrigate as appropriate
 - Root prune 2
 - Monitor health, irrigate as appropriate
 - Root prune 3
 - Prepare receptor site
 - Wrap rootball with hessian, secure with wire and cover outward face with AirPot to prevent girdling growth
 - Blade driven beneath rootball, or pipe platform inserted depending on assessment at the time of moving
 - Move to receptor site, place and secure with below and above ground anchors and guys
 - 10 year programme of aftercare and monitoring
2. **Protection of T5, T9 and T10:** These three trees will be retained in situ and protected during translocation works to T6, T7 and T8, and during the installation of the new guided busway, and it's associated infrastructure. Tree protective fencing will be erected in the locations shown on the tree protection plan, and in accordance with the requirements of BS5837:2012.
3. **Installation of temporary ground protection:** No new permanent hard surfacing is to be installed within the RPAs or veteran tree buffer zones of any retained veteran trees, specifically T5, T9 or T10. However, where access is required during the translocation process, ground protection will be installed to protect the retained soil from compaction. It would be feasible to install custom designed temporary ground protection without causing any significant disturbance to the RPA. From our previous experience at installing such ground protection, we are confident that this can be implemented without any long-term detrimental impact on tree health, with the detail to be agreed as part of a planning condition. In summary, if the guidance set out in SGN 3 *Ground Protection* is observed, we believe that the proposed works can be

1: Arboricultural method statement

implemented without any long-term detrimental impact on tree health, and therefore local character.

4. **Services:** All services will be installed outside RPAs, but if for any reason it is agreed with the LPA that services can go within RPAs, this will be carried out following the guidance in SGN 11 *Installing services in RPAs*.
5. **Landscaping:** There will be landscaping towards the end of the build within the RPAs of retained trees, which will be inside the construction exclusion zone. This work will be carried out following the guidance in SGN 12 *Landscaping in RPAs*.

If unanticipated issues arise on site not referenced in the above explanations, further guidance on how to manage them can be found in the accompanying Manual.

Appendix 1: Background administrative information and data collection

A1.1 Table 2: Background administrative information

	Background administrative information
Report date & reference	1 st August 2025; 25024-DRAFT-AMS-CA
Tree protection plan reference	25024-TPP-01
Instructing client	Greater Cambridge Partnership
Instructions	Visit the site, assess the relevant trees, prepare a schedule of their details, describe the impact of the proposal on those trees and identify the tree protection issues in an arboricultural method statement with a tree protection plan, if appropriate.
Provided documents	<ul style="list-style-type: none"> Layout drawing reference cd1_deemed_planning_drawings_-_proposed_site_plans, received by email on 20th May 2025
Report author and credentials	Chris Allder is a Chartered Forester (www.charteredforesters.org), and a Fellow and Registered Consultant of the Arboricultural Association (www.trees.org.uk), and is fully qualified to undertake the assessments in this report (https://www.barrelltreecare.co.uk/who-we-are/).
Report limitations	This report does not consider ecological or archaeological issues, or any other matter beyond the assessment of the trees.

A1.2 Table 3: Data collection

	Data collection
Date of site visit	18 th March 2025
People present during site visit	Chris Allder accompanied by; Nick Geisler (WSP), Stuart Banks (National Trust), David Franklin (Urban Forestry), and Bridget Sutton (representing Anna Gazeley, Coton Orchard)
Weather & visibility	Clear, still and dry with good visibility.
Limitations to observations	<ul style="list-style-type: none"> The inspection of the trees for the purposes of assessing their condition and work requirements was made on the basis that they will be annually inspected in the future to identify any changes in condition and review the original recommendations. For these reasons, the tree assessment advice only remains valid for one year from the date that the trees were last inspected. All observations were of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level. Observations of trees outside the site boundaries are confined to what was visible from within the site. All dimensions were estimated unless otherwise indicated.
Tree Preservation Orders, Conservation Areas, and tree categorisation	The trees are subject to the South Cambridgeshire District Council (Coton Orchard, Cambridge Road, Coton) TPO no. 01/2025, confirmed by the council on the 9 th April 2025.
Tree location and numbering	Each tree was inspected and the numbering scheme is indicated on the tree protection plan. In the absence of a topographical survey their approximate positions and canopy extents are indicated on the GIS plan derived from GPS locations.
Recording of tree data	For each identified tree the information collected was recorded on the tree schedule in Appendix 3 and the tree protection plan.
Compliance of data collection with BS 5837	The data collection is fully compliant with the advice in subsection 4.4.2 of BS 5837. When collecting this information, specific consideration was given to any low branches that may influence future use, age class, physiological



Appendix 1: Background administrative information and data collection

	Data collection
	condition, structural condition, and remaining contribution. Where appropriate, crown spreads were also noted where they differed from those shown on the provided land survey.

Appendix 2: Tree schedule and explanatory notes

NOTE: Colour annotation is A & B trees with green background; C & U trees with blue background; trees to be removed in red text.

Tree no	Species	Height (m)	Diameter (cm) @ 1.5 m	Maturity	Category	Notes	BS5837 RPA radius (m) 12x diameter	Veteran Tree Buffer radius (m) 15x diameter	Veteran Tree Buffer radius 5 m beyond crown spread
T1	Bramley apple	2	60*	Dead	U	Stump, elder growing within	n/a	n/a	n/a
T2	Bramley apple	5	65*	Veteran	A	Hollow stem, Innonotus hispidus present, branch hollowing, deadwood and decay from pruning wounds	7.8	9.8	11.2
T3	Bramley apple	5	65*	Veteran	A	Hollow stem and main branches, old Innonotus bracket present	7.8	9.8	10.5
T4	Bramley apple	5	62.5*	Veteran	A	Stem hollowing, main branches decayed wounds and hollowing, old Innonotus bracket present	7.5	9.4	11.2
T5	Bramley apple	5	70*	Veteran	A	Decay present, old Innonotus bracket on branches, stem intact, branch hollowing to nw and se	8.4	10.5	10.7
T6	Bramley apple	4	55*	Veteran	A	Hollow stem, longitudinal crack down stem, branch decay and hollowing	6.6	8.25	9.3
T7	Bramley apple	5	52.5*	Veteran	A	Suppressed by hedge to west, hollow stem and main branches	6.3	7.9	10.8
T8	Bramley apple	5	57.5*	Veteran	A	Old Innonotus bracket on branches, branch hollowing from old wounds, hollowing stem, swelling at stem base	6.9	8.6	11.3

Appendix 2: Tree schedule and explanatory notes

T9	Bramley apple	5	72.5*	Veteran	A	Old Ganoderma sp bracket on stem, hollowing stem and main branches, decay at branch ends, suppressed by hedge and shrubs to west	8.7	10.9	11
T10	Bramley apple	5	65*	Veteran	A	Branch hollowing, decay at pruned ends, woodpecker holes	7.8	9.8	11.1
T11	Bramley apple	5	60*	Veteran	A	Southern branch dead and failed, hollow stem, decay at pruning wounds, hollowing branches	7.2	9	10.1
T12	Bramley apple	4	80*	Veteran	A	Hollow stem and main limbs, pruning wounds decaying, holes and deadwood	9.6	12	11.2
T13	Bramley apple	4	65*	Veteran	A	Hollow stem and branches, failed lateral branches, extensive decay and deadwood	7.8	9.8	11
T14	Bramley apple	4	42.5*	Mature	C	Significant dead branches due to suppression by adjacent by hedge, probable replacement tree, it is much smaller than others	5.1	n/a	n/a

Appendix 2: Tree schedule and explanatory notes

Explanatory Notes

T: Tree
V: Veteran tree

- **Botanical tree names:**

Bramley apple: *Malus domestica* 'Bramley's seedling'

- **BS 5837 (2012) compliance:** All data has been collected based on the recommendations set out in subsection 4.4 of BS 5837.
- **Tree inspections and site limitations:** Each tree was subjected to a quick visual check level of inspection. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during this level of inspection and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground. A separate note is recorded if further investigation may be required to clarify its status.
- **Crown spreads:** Crown radial spreads were estimated to the nearest metre and represent our assessment of the viable crown dimensions that would be retainable after normal management. For clarification, the viable crown spread is the size of the main body of the crown, and not necessarily the furthest extent of odd branches that extend out beyond this core of the crown.
- **Dimensions:** All dimensions are estimated unless otherwise indicated with an asterisk (*) after the figure.
- **Species:** Species identification is based on visual observations. Where there is some doubt over tree identity, sp is noted after the genus name to indicate that the species cannot be reliably identified at the time of the survey. Where there is more than one species in a group, only the most frequent are noted and not all the species present may be listed.
- **Height:** Height is estimated to provide a broad indication of the size of the tree.
- **Trunk diameter:** Trunk diameter is estimated or measured (with a diameter tape), at the discretion of the consultant, and is normally rounded up and recorded in 2.5 cm increments as advised in BS 5837 Table D1. Estimates may be made where access is restricted, direct measurement is prevented because of ivy on the trunk, or the tree is assessed as low quality. The point of measurement and the adjustments for stem variations are as advised in Figure C1 of BS 5837. Individual diameters for multiple stems are recorded in the notes, with the calculated cumulative diameter recorded in the diameter column.
- **Maturity:** In planning context, maturity provides a simplistic indication of a tree's ability to cope with change and its potential for further growth. For the purposes of this report, young indicates a potential to significantly increase in size and a high ability to cope with change, maturing indicates some potential to increase in size and a medium ability to cope with change, and mature indicates little potential to increase in size and limited ability to cope with change.
- **Low branches:** Any low branches that would not be feasible for removal during normal management and should be considered as a design constraint are noted here and explained in the notes.
- **Category:** Our assessment automatically considered tree physiological/structural condition (BS 5837, 4.4.2.5h), and so these are not listed separately in the schedule. Additionally, the category accounts for the remaining contribution (BS 5837, 4.4.2.5i) as greater than 40 years for A trees, greater than 20 years for B trees, at least 10 years for C trees and less than 10 years for U trees, so this is also not listed separately in the schedule. Category A, B and C trees are automatically listed as sub-category 1 unless otherwise stated.
- **Notes:** Only relevant features relating to physiological or structural condition and low branches that may help clarify the categorisation are recorded. If there are no notes, then the presumption should be that no relevant features were observed.
- **Future tree safety inspections:** Due to the time that may elapse between the original survey and the start of development, all trees should be re-inspected as part of the standard risk management process before any works start on site. Our assessment of the trees was carried out on the basis that a re-inspection would be carried out within a year of the assessment visit and our advice on tree condition must be reviewed annually from the date of that visit.

Appendix 3: QR Codes for SGNs (Scan with reader to download)

		
<i>SGN 1 Monitoring tree protection</i>	<i>SGN 2 Fencing protected trees</i>	<i>SGN 3 Ground protection</i>
		
<i>SGN 4 Pollution control</i>	<i>SGN 5 Site cranes & piling rigs</i>	<i>SGN 6 Height restrictions</i>
		
<i>SGN 7 Excavating in RPAs</i>	<i>SGN 8 Removing surfacing and structures in RPAs</i>	<i>SGN 9 Installing/upgrading surfacing in RPAs</i>
		
<i>SGN 10 Installing structures in RPAs</i>	<i>SGN 11 Installing services in RPAs</i>	<i>SGN 12 Landscaping in RPAs</i>

Tree protection - 25024-TPP-01

Location of trees, categorisation & protection/management proposals

Cambourne to Cambridge TWAO Guided Busway

Scale @ A1 1:500

01020304050

m

Provided drawings

Topo: No topo survey provided

Layout: (20th May 2025)

cd1-164_deemed_planning_drawings_-_proposed_site_plans

Tree types

T = Tree, G = Group, H = Hedge, W = Woodland, AW = Ancient woodland, V = Veteran

TX

A

BS category A

Trees of high quality

TX

C

BS category C

Trees of low quality

TX

U

BS category U

Unsuitable for retention

Proposed layout

Order limits

Protective barrier/fencing

Construction exclusion zone

Precautionary area

Root protection area (RPA) boundaries for category A and B trees

Root protection area (RPA) boundaries for category C trees

Tree	Species	Category	Nominal RPA radius (m)	Tree works
T1	Bramley apple	U		
T2	Bramley apple	A	7.8	
T3	Bramley apple	A	7.8	
T4	Bramley apple	A	7.5	
T5	Bramley apple	A	8.4	
T6	Bramley apple	A	6.6	
T7	Bramley apple	A	6.3	
T8	Bramley apple	A	6.9	
T9	Bramley apple	A	8.7	
T10	Bramley apple	A	7.8	
T11	Bramley apple	A	7.2	
T12	Bramley apple	A	9.6	
T13	Bramley apple	A	7.8	
T14	Bramley apple	C	5.1	

SGN 1

Monitoring tree protection

Always:

have a pre-commencement meeting with the tree consultant before development starts

use the tree consultant to regularly check that protection remains fit for purpose

use the tree consultant to supervise work in RPAs

keep a written record of supervision

SGN 2

Fencing protected trees

Always:

install protection before development starts

make sure protection is fit for purpose, i.e. it prevents damage to trees and soil

keep protection in place until there is no risk to trees

get written permission to move or remove any protection

SGN 3

Ground protection

Always:

install protection before development starts

make sure protection is fit for purpose, i.e. it prevents damage to trees and soil

keep protection in place until there is no risk to trees

get written permission to move or remove any protection

SGN 4

Pollution control

Always:

keep toxic products away from RPAs

SGN 11

Installing services in RPAs

Always:

use the tree consultant to supervise work in RPAs

select the least damaging option when installing services, so prioritise trenchless over broken trench over continuous trench

hand-dig trenches if trenchless is not feasible

SGN 12

Landscaping in RPAs

Always:

use the tree consultant to supervise work in RPAs

avoid raising ground levels within 1m of the trunks of retained trees

How to use this plan

More detailed guidance on each Site Guidance Note (SGN) can be found in a printed hard copy compilation of all the SGNs, Manual for Managing Trees On Development Sites version 3.0, issued to the Site Manager at the pre-commencement site meeting (Note: This should be retained on site throughout the duration of works). Additionally, an electronic pdf compilation of all the SGNs, was submitted with this drawing to the local planning authority and the client. Alternatively, a pdf of each SGN can be downloaded by:

1. clicking the image links in the electronic pdf version of this plan;

2. holding a mobile phone QR (Quick Response) code reader over the QR code in the paper version of this plan; or,

3. visiting our website at <https://www.barrelltreecare.co.uk/resources/technical>.

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TREE CONSULTANCY

Permission is granted to scale from this drawing for Local Authority Planning Approval purposes relating to tree protection measures only. Where applicable this drawing is to be read in conjunction with the arboricultural report.

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