

WHARTON

Natural
Infrastructure
Consultants

Arboricultural Method Statement

SITE LOCATION

Kingston University
Kingston Hill
KT2 7LB

ISSUE DATE

17th May 2021

OUR REFERENCE

210422 1265 AMS V1

PREPARED FOR

Turnberry Planning

PRINCIPAL AUTHOR

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TechArborA



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Executive Summary

Project location

This Arboricultural Method Statement (AMS) has been commissioned by Turnberry Planning (the Client). It is prepared in relation to the Prior Approval Application to demolish four buildings at Kingston University, Kingston upon Thames, KT2 7LB ('the Site') (see aerial photography at Appendix 1).

Permitted Demolition

The Permitted Demolition involves the demolition of four existing outbuildings and its temporary remediation at the University Campus. The removal of the buildings is to facilitate a future planning application to landscape the area. The majority of the demolition works is to be undertaken using hand tools, any plant machinery used will be micro machinery.

Results of survey

A total of 9no. individual trees and 2no. groups of trees were recorded. These include 4no. category B and 7no. category C. No category A or U retention value were recorded as part of the tree survey.

Conclusions

To implement the Permitted Demolition there will be no requirement for tree removal.

The Permitted Demolition will require the demolition of four existing buildings, these buildings are shown on drawing A002 in appendix 4. The demolition encroaches into the RPA of T1 (horse chestnut), T7 (wild cherry) and T8 (boxelder). However, the RPA of all three trees is under well-established hard standing ground from the footprint of the respective, neighbouring building.

The Permitted Demolition is not considered to have an impact on the amenity of the Site or the surrounding area.

As all of the surveyed trees are to be retained, the Permitted Demolition is considered to be in line with the Royal Borough of Kingston Upon Thames 'Core Strategy'.

Recommendations

Prior to any works being undertaken on-site an Arboricultural Clerk of Works (ACoW) must be appointed to meet with all site personnel and do a toolbox talk in relation to the trees, their physical protection and works within the Construction Exclusion Zones (CEZ).

It is recommended that the ACoW undertakes the Site observation and monitoring works on a monthly basis throughout the demolition process.

It is critical that all protective fencing is installed and erected and that the CEZ is enforced prior to the commencement of any works on-site. Following installation of tree protection, a site meeting will be undertaken with the Tree Officer to ensure satisfaction of all parties.

The Permitted Demolition of the four existing buildings should be undertaken following the installation of tree protective barriers/fencing, which will be done prior to commencement of operations. This will ensure plant and vehicles engaged in the demolition process will operate outside of RPAs of trees to be retained. Clause 7.3.4 of BS5837:2012 suggests; where trees stand adjacent to structures to be removed, the demolition should be undertaken inwards within the footprint of the existing building (often referred to as a "top down, pull back").

The removal of the existing paved surface within the RPA's of T1 (horse chestnut) will be observed by the ACoW. The paving will be removed by hand-dig only methods (e.g. hand-tools or pneumatic drill) working away from the tree and within the footprint of the adjacent building once it has been demolished.

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The on-site trees to be retained should be proactively managed to ensure that they enhance the development and the wider environment. Therefore, this AMS provides detail of the measures and steps required to retain trees through and post development specifically through adequate supervision, tree protection and construction techniques.

For tree and root protection measures to work effectively all personnel associated with the construction process must be familiar with the Tree Protection Plan at Appendix 4.



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1. Introduction

1.1 Author

- 1.1.1 The Principal Author of this report is Dean Hickton *Dip Arb L4 (ABC) TechArborA* Arboricultural Consultant at Wharton Natural Infrastructure Consultants Ltd. (known here in as 'Wharton').
- 1.1.2 Dean has several years of experience in the arboricultural industry and has worked on a variety of projects ranging from commercial and residential sites throughout the UK. Dean is a Technical Member of the Arboricultural Association (AA) and is therefore required to uphold the professional and ethical standards within their Code of Conducts. Dean is also LANTRA certified to undertake Professional Tree Inspections.
- 1.1.3 The detail provided within this report is a true and accurate reflection of both the Site conditions at the time of survey, as well as the professional opinion of the Principal Author.

1.2 Terms of instruction

- 1.2.1 This Arboricultural Method Statement (AMS) has been commissioned by Turnberry Planning (the Client). It is prepared in relation to the Permitted Demolition to demolish four buildings at Kingston University, Kingston upon Thames, KT2 7LB ('the Site') (see aerial photography at Appendix 1).
- 1.2.2 It is appreciated that the trees could provide a constraint and therefore a detailed tree survey and arboricultural report was commissioned to fulfil the requirements of BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations*. It considers trees directly on-site or within influencing distance of the Site.
- 1.2.3 The instruction is to produce an AMS in order to fulfil the requirements of BS5837:2012 and Royal Borough of Kingston upon Thames ('the Council'), who require an AMS to make an informed decision on our Client's planning application.
- 1.2.4 The document is also intended as a reference point for all Site Operatives and a copy will remain with the Site Manager for the duration of the development. This document may be used as a point of reference if there were to be a dispute over compliance with related planning decisions.

1.3 Scope of project

- 1.3.1 The scope of this assessment is threefold:
- i. Undertake a Tree Constraints Survey of the Site and within influencing distance (based on the surveyor's discretion) of the Site;
 - ii. Provide an impact appraisal and AMS specifically in relation to the physical protection of trees, to reduce the impact on retained trees, and those located adjacent to the Site; and
 - iii. Provide a detailed Tree Protection Plan.

1.4 Implementation of the Arboricultural Method Statement

- 1.4.1 It is understood that the Client and their Principal Contractor are responsible for ensuring that the site works, and subsequent construction of the Permitted Development follow the measures detailed within this AMS.
- 1.4.2 The Client and principal contractor have responsibility to ensure that works at the Site comply with current legislation in respect of protected trees, as well as to ensure that works at the Site comply with planning obligations/conditions.



2. Site Description

2.1 Site visit

- 2.1.1 The tree assessment was undertaken on 21st April 2021 by the Principal Author, and the trees inspected from ground level. The weather at the time of survey was clear and bright and not considered a constraint to the assessment.
- 2.1.2 The Site comprises a car park and part of the wider university campus at Kingston Hill, Kingston upon Thames (see land within the red line boundary at Appendix 1), known herein as 'the Site'. The Site is centred approximately at OS National Grid Reference TQ 20753 71445. Access to the Site can be gained from the road that runs along the north of the university campus, off Kingston Hill.
- 2.1.3 The Site is c.0.48ha in size and forms three tiers. It currently comprises two dilapidated huts, the Computer Centre and Dance Hall, along with associated car parking facilities and grassed open space with accompanied seating areas.
- 2.1.4 The Site is bounded by dense woodland that fall within the ownership of the university. Neighbouring properties include Robin Hood Primary, along with residential properties along Coombe Park and Ullswater Crescent to the south and north, respectively. The main highway Kingston Hill runs along the western boundary of the Site.
- 2.1.5 The majority of the trees on-site and within close proximity to it are of a similar age and condition. The trees range from semi-mature to mature and are all perceived to be planted specimens.
- 2.1.6 The individual trees are dispersed throughout the Site with two groups located at tiered intersection near the west and east of the Site.

2.2 Statutory and Non-Statutory Designations

National Planning Policy Framework (NPPF) (February 2019)

- 2.2.1 When determining planning applications, Local Planning Authority's (LPA) should apply the following principles:
- *If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternate site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.*
 - *Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.*
 - *Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity (paragraph 175).*
- 2.2.2 The trees within this report are neither considered aged or veteran and therefore the principles for refusal within the NPPF would not be considered applicable.

Local Planning Policies

- 2.2.3 Local development framework 'Core strategy' was adopted by Royal Borough of Kingston Upon Thames in April 2012. It sets out what the Council expects in respect to trees and development:
- *The Council will expect new development to ensure that trees that are important to the character of the area or covered by Tree Preservation Orders are not adversely affected.*

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- *Where trees are to be lost through development the Council will normally require the planting of two specimens for each tree lost. The Council will refuse applications that adversely impact upon the leafy character of the Borough where commensurate appropriate replacement is not provided.*

2.2.4 Preparing Borough Tree and Woodland Strategies forms part of a regional document; The Green Infrastructure & Open Environments. The planning guidance was set out by the mayor of London. This policy framework was adopted in February 2013 and details the following policies in relation to trees and development.

2.2.5 Section B of policy 7.21 in the guidance refers to the importance of high value trees during planning decisions and that they should be retained as part of development:

- *Existing trees of value should be retained and any loss as a result of development should be replaced following the principle of 'right place, right tree'. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.*

Tree Preservation Orders and Conservation Areas

2.2.6 The LPA has been contacted to establish whether any trees contained within the survey are protected by either a Tree Preservation Order (TPO) or are within a Conservation Area.

2.2.7 It has been confirmed by the Council via e-mail on 21st April 2021 that the Site is covered by a Woodland Tree Protection Order.

Relevant wildlife legislation

2.2.8 The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Species and Habitat Regulations 2017 (as amended) provide statutory protection of birds, bats and other species that can inhabit trees. The Natural Environment and Rural Communities Act 2006 (Section 41 England and Section 42 Wales) also places a duty on Local Planning Authorities to consider biodiversity when carrying out their duties. The Conservation of Habitats and Species Regulations 2017 specifically provides safeguards for European Protected Sites and Species (as listed in the Habitats Directive). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 which continue the same provision for European protected species, licensing requirements, and protected areas now that the UK has left the European Union.

2.2.9 Great care is required to avoid an offence under the above legislation, and consideration should be given to the potential presence of protected species within a tree subject to future works. Where the presence of protected species is suspected, the project ecologist or Natural England should be contacted for advice before works proceed.

Felling Licence

2.2.10 Tree felling is also restricted under the Forestry Act 1967. Under this act, there is an exemption from the need for a felling licence for "*Felling trees immediately required for the purpose of carrying out development authorised by planning permission (granted under the Town and Country Planning Act 1990) ...*"

2.2.11 If the prior approval is granted, then any trees which require felling to implement the approved plans are exempt from this statutory protection. Outline planning permission does not provide an exemption to the regulations that control tree felling in the Forestry Act 1967.



3. Permitted Demolition

3.1 Development description

3.1.1 The Permitted Demolition is to demolish four existing outbuildings and its temporary remediation at the University Campus. The removal of the buildings is to facilitate a future planning application for various works, including landscaping the area. The majority of the demolition work is to be undertaken using hand tools, any plant machinery used will be micro machinery.

3.2 Reference documents

3.2.1 As background information, the following documentation has been referenced.

Table 1 Document and Plans Provided

Document Description	Reference No.	Prepared By	Date
Topographical Survey	2016116_KINGSTON UNIVERSITY BUILDING A_SITE SURVEY	XYZ Land Surveyors	June 2016
Permitted Demolition Plan	RBA_KHC-004 A (export)	Robert Bray Associates	May 2021

4. Arboricultural Survey Results

4.1 Method of data collection

4.1.1 The trees on the Site were originally surveyed without reference to the Site layout as detailed in Clause 4.4.1.1 of BS5837:2012. However, for the purposes of this AMS, the buildings identified for demolition were considered.

4.1.2 The survey recorded trees either as individual specimens or as groups, where these trees were aerodynamically, culturally, or visually important as groups. The tree numbers associated with each tree are cross-referenced within the schedule and plans at Appendix 3 and 4 respectively. The complete method of data collection for the tree survey is provided at Appendix 2.

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4.2 Summary of data

4.2.1 A total of 9no. individual trees and 2no. groups of trees were recorded. These include 4no. category B and 7no. category C. No category A or U were recorded as part of the tree survey.

4.2.2 The comments for each tree vary and are given in detail in the BS5837:2012 Tree Schedule at Appendix 3.

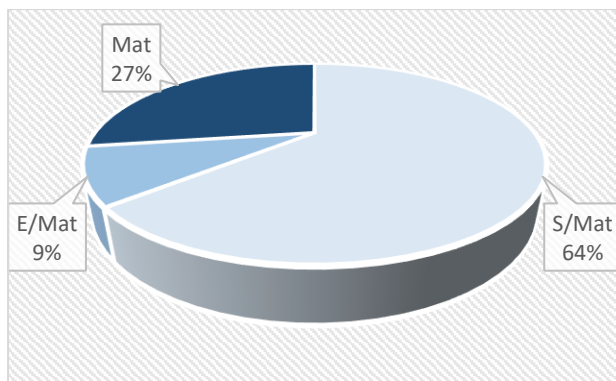


Figure 1, Tree Age Distribution

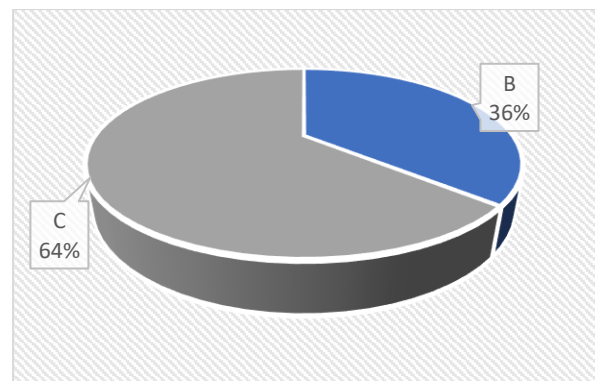


Figure 2, Tree Categorisation Distribution

4.2.3 A select number of trees recorded display a unique tree number tag, this has been referenced under the 'Tag No.' column in the Tree Schedule at Appendix 3.

4.2.4 It should be noted that *Table 1* of BS5837:2012 only gives recommendations in relation to remaining years. A tree may be considered to have a longer remaining life, however, still be considered to be of a lower category given its maturity, condition or overall impact and amenity to the Site and surrounding area.

4.2.5 In line with BS5837:2012, the category A and B trees should be considered as providing a substantial contribution to a site. Therefore, Category A and B trees should be retained and incorporated into the development where possible and feasible.

4.2.6 Generally, category C and U trees are of low quality or are young specimens, which can be readily replaced, therefore, should not be considered a constraint to Permitted Demolition. However, it is understood that, wherever possible, trees will be retained for the benefits that they currently provide as well as helping to ensure a continuity of tree cover and providing a mature landscape to the Site.

4.2.7 The location of each tree and their associated constraints including canopy spread and Root Protection Areas with and without the post demolition layout are illustrated on plan numbers A001 and A002 both at Appendix 4.



5. Impact Assessment

5.1 Relationship between site layout and trees

5.1.1 There will not be a requirement to remove any trees across the Site to carry out the Permitted Demolition, therefore there will be no impact on the amenity of the Site.

5.2 Below Ground Constraints

Root protection area

5.2.1 The below ground constraints are generally summarised as the Root Protection Areas (RPA). The RPA is an area usually equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single stemmed trees. For trees with more than one stem, one of two calculation methods should be used. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided from Annex D of BS5837:2012.

5.2.2 The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s) and this is to avoid soil compaction, changes in levels or soil contamination which could alter the trees condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.

5.2.3 The RPA for the trees has been calculated as prescribed by BS5837:2012 and are shown as pink dashed circles or polygons on the Tree Constraints Plan at Appendix 4 (A001). These plans illustrate the relationship between the RPAs associated with the trees and the Permitted Demolition.

5.2.4 In addition to the illustration of RPAs on the plans at Appendix 4, the numerical RPA values are provided within the Tree Schedule at Appendix 3. Within the schedule both RPA radius in metres from the main stem and total area for the RPA as square metres.

Existing conflicts with RPAs

5.2.5 The majority of the trees across the site have existing RPA incursion from hard surfacing and associated buildings.

Permitted demolition within RPAs.

5.2.1 The Permitted Demolition will require the demolition of four existing buildings, these buildings are shown on drawing A002 in appendix 4. The demolition encroaches into the RPA of T1 (horse chestnut), T7 (wild cherry) and T8 (boxelder). However, the RPA of all three trees is under well-established hard standing ground and the associated structures. The Permitted Demolition of the existing buildings should be undertaken following installation of tree protective barriers/fencing prior to commencement of operations. This will ensure all plant and vehicles engaged in demolition, operate outside of RPA of trees to be retained.

5.2.2 Clause 7.3.4 of BS5837:2012 suggests '*Where trees stand adjacent to structures to be removed, the demolition should be undertaken inwards within the footprint of the existing building (often referred to as a "top down, pull back").*'

5.3 Above Ground Constraints

5.3.1 The above ground constraints predominantly refer to the impact of the canopy of any retained tree on the Site either by size and form, shadowing and/or nuisance factors. As a result, a canopy protection zone is sometimes required to ensure that the canopy is not harmed during construction.

5.3.2 A schedule of tree work has been provided within Appendix 3. As long as section 11.1.3 is adhered to, there will not be a requirement for tree work as there is sufficient offset between the canopy



of retained trees and the existing buildings.

- 5.3.3 Should the need for tree works arise for whatever reason, this will be agreed with the appointed Arboricultural Consultant (when applicable), and also approved in writing by the Council. Under no circumstances will the appointed contractor deviate from the Tree Work Schedule contained in Appendix 3, unless approved in writing by the Council.

6. Works Phasing

- 6.1.1 This AMS makes a number of recommendations for the Site. For convenience, all of the recommendations in this report have been listed in the table below with the relevant sections and appendices listed.
- 6.1.2 In order to ensure a successful development, it is imperative that all of these recommendations are carried out in a similar order to the tabulated form below.

Table 2 Works Phasing Programme

Phase / Timing	Recommendation	Section
Pre-Development	Appoint Arboricultural Clerk of Works (ACoW) to oversee all arboricultural issues on-site Erect tree protection fencing to BS5837:2012 specifications as appropriate Initial / pre-commencement meeting	8, 9, 10
During Development	Monitoring site visits by ACoW to ensure continued compliance	11
Post-Development	Post development inspection to identify any required remedial works General maintenance / remedial tree works	12

7. Pre-Development Works

7.1 Arboricultural Clerk of Works (ACoW)

- 7.1.1 It is recommended that the developers appoint a suitably qualified arboriculturist to act as an ACoW. The ACoW will be engaged to monitor and oversee the implementation of the works required in this AMS.
- 7.1.2 The role of the ACoW is a relatively formal one. Normally their involvement should be limited to a number of site visits where decisions can be made relatively quickly. In the case of this development the following occasions are where the ACoW will be required:
- Initial meeting (usually the pre-commencement meeting see Section 9.1) – to ensure all required tree protection is in place, and to discuss any required amendments with the Local Planning Authority Tree Officer.
 - Monitoring visit – Informal inspection to ensure that all tree protection measures are being maintained, and to inform the Site Manager where appropriate measures are not in place.
 - Completion meeting – To inspect trees to assess for any required works and to confirm that the development has been sufficiently completed, and the tree protection measures can be removed.

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7.1.3 The ACoW will also be the first contact for arboricultural advice for any issues that arise that are not detailed in this report, such as additional tree works, work required within the RPA of the trees on-site, any damage that has occurred to any of the retained/unmanaged trees, or any breach of the tree protection measures on-site.

7.2 Reporting process

7.2.1 If during the construction any damage to either the retained trees or the RPAs is sustained this should be reported to the Site Manager immediately. At the earliest possible time the Site Manager should inform the ACoW, who will undertake a site visit to assess the impact on the trees and make recommendations for any required works.

7.2.2 Possible damage to the trees or to the RPAs could result from: collision damage to crowns of retained trees by site vehicles; excavation within root protection area; dumping of soil / materials within root protection area; chemical / cement spillage into root protection area or fire damage to the crown / stem of the tree.

7.3 Progress sheet

7.3.1 During the various stages of the development a record of the completion of the various tree protection works will be kept by the ACoW. This will provide the Council with sufficient evidence that all practicable steps have been taken to prevent damage to the trees, thereby ensuring compliance to any Planning Conditions.

7.3.2 A separate progress sheet will be filled in for each completed operation. The original will be kept with the copy of this document that will be retained by the Site Manager in the Site Office. Once completed a copy will be sent to the ACoW and the Councils Tree Officer.

8. Construction Exclusion Zone

8.1 Overview

8.1.1 The principal protection for the retained trees (above and below ground) and associated soils within the Site is through the maintenance of the Construction Exclusion Zone (CEZ). The CEZ will be sacrosanct throughout development, no access will be allowed to the area other than for operations specified in this AMS document or those agreed with the LPA at a later date.

8.1.2 The positioning of the CEZ will be in line with the Tree Protection Plan at Appendix 4.

8.1.3 Prior to any on-site demolition or construction, tree protective measures and the CEZ must be in place. These will be inspected prior to the commencement of works by the ACoW and Tree Officer. The installation of tree protection will be undertaken before work commences.

8.1.4 The tree protection fence/barrier once erected will form a CEZ and will not be moved or relocated without approval from LPA or ACoW.

8.1.5 At the end of the project the fence will be removed only after confirmation by the ACoW and the Council that this is appropriate.

8.2 Ensuring the integrity of the construction exclusion zone

8.2.1 To guarantee the protection that the CEZ provides to retained trees and soils, the following must be carefully adhered to when planning site operations:

- The protective tree fencing shall be maintained throughout the development phase.
- No materials, machinery, temporary structures, chemicals, or fuel shall be stored within the CEZ.
- No excavations or increases in soil level within the CEZ are permitted without prior written



approval from the LPA.

- Although large plant machinery is unlikely to be used, care should still be exercised if there is a requirement to use mini diggers or micro machinery, this is to ensure that wide or tall loads or plant with booms, jibs and counterweights do not come into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banks person to ensure that adequate clearance from trees is maintained at all times.
- Material which will contaminate the soil such as concrete mixing, diesel oil and vehicle washing must not be discharged within 10m of the tree stems. In the event of an accident or spillage the ACoW must be notified
- Fires must not be lit in a position where their flames can extend to within 5m of foliage, branches, or trunk. This will depend on the size of the fire and the wind direction.
- Any landscaping within the CEZ must avoid soil disturbance. Therefore, re-grading and rotavators are not permitted. Any agreed soil re-profiling to facilitate final agreed levels must be carried out by hand with topsoil.

8.3 Fencing specification

- 8.3.1 Prior to any demolition, construction or vehicular movement tree protective measures must be in place. These will be checked prior to the commencement of works by the ACoW.
- 8.3.2 These protective measures ensure suitable protection of trees and associated soils. The key method of tree protection is through the use of barriers/fencing.
- 8.3.3 The tree protection fence/barrier once erected will not be moved or relocated without written approval from the Council. The tree protection area behind the fence/barrier (the Development Exclusion Zone) will be sacrosanct throughout development and no access will be allowed to this area including for example the storage of or moving of materials or machinery. In the Development Exclusion Zone there will be no excavations or increases in soil level without prior written approval from the Council. The location of protective fencing is illustrated on the Tree Protection Plan at Appendix 4.
- 8.3.4 The barriers will be made from scaffold in a vertical and horizontal framework, as shown as Figure 3 in BS5837:2012 (see Appendix 5). This is not the default specification as in this instance it is more appropriate to place the fencing on rubber feet with a supporting rear strut.
- 8.3.5 The non-default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 3 in Appendix 5. The vertical 2m tall, welded mesh panels on rubber or concrete feet, the panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from within the fence. The distance between fence couplers should be at least 1m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins.
- 8.3.6 There will be clear and visible signs attached to the protective fencing with the following "Construction Exclusion Zone - No Access" and the area will be regarded as sacrosanct by everyone. This will be checked prior to the commencement of work by the ACoW and Tree Officer initially, and by the ACoW throughout the course of development.
- 8.3.7 A detailed A1 laminated Tree Protection Plan will be located within the site office throughout the course of development. This will include details of the fencing specification and location for which the fence will be erected.



9. Site Meetings

9.1 Pre – commencement site meeting

- 9.1.1 It is recommended that a pre-commencement site meeting be undertaken with the Tree Officer, the client and the ACoW prior to any on-site works commencing. This meeting will enable the Tree Officer and the ACoW to inspect the protective fencing and to ensure all parties are satisfied that with the tree protection measures set out.
- 9.1.2 A site visit will then be undertaken by the ACoW following the Site meeting to ensure protective measures remain in place; file notes regarding the progress of the works will be prepared and filed. Once the tree protection measures have been confirmed as acceptable, they can be "signed off" on the progress sheet by the ACoW (see Section 7.3). For the purpose of the demolition, it is recommended a single site visit will be sufficient to oversee the removal of the footpath associated with T1 and ensure the tree protection measures remain in place.

10. Demolition Works

10.1 Demolition Site Supervision

- 10.1.1 As access into the Site is restricted, the project manager has confirmed that much of the demolition process will be undertaken using hand tools and that any plant machinery that is to be used will be micro machinery.
- 10.1.2 Due to the soft nature of the demolition methods and the structures to be demolished being single storey, the ACoW will not be required to attend the Site to oversee the demolition works.
- 10.1.3 The Permitted Demolition of the four existing buildings should be undertaken following the installation of tree protective barriers/fencing, which will be done prior to commencement of operations. This will ensure plant and vehicles engaged in the demolition process will operate outside of RPAs of trees to be retained. Clause 7.3.4 of BS5837:2012 suggests; where trees stand adjacent to structures to be removed, the demolition should be undertaken inwards within the footprint of the existing building (often referred to as a "top down, pull back").

11. During Development

11.1 Removal of existing paved surface

- 11.1.1 The removal of the existing paved surface within the RPA of T1 (horse chestnut) will be observed by the ACoW. The paving will be removed by hand-dig only methods (e.g. hand-tools or pneumatic drill) working away from the tree and within the footprint of the adjacent building once it has been demolished. This will be done while being observed by the ACoW.
- 11.1.2 Should any exposed roots be encountered during the removal of the paving slabs, these will be retained and wrapped in damp hessian and kept damp, to avoid drying and desiccation and climatic changes.
- 11.1.3 Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

11.2 Infrastructure

- 11.2.1 The details provided for this application suggest that services will be capped and there will not be a requirement to excavate within the RPA of trees at the Site. If there is a requirement to access below ground services in the RPAs of retained trees, the use of hand digging as detailed



in the National Joint Utilities Group publication '*Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees*' (NJUG 10, Volume 4, 2007) will be undertaken to minimise the impact on the tree roots.

12. Post-Development

12.1 Post-development inspection

- 12.1.1 Following the completion of the development an inspection of the condition of retained trees will be made. Where appropriate tree works will be undertaken following an application to the Council. This will be to undertake works on the grounds of safety and also to remediate where necessary.
- 12.1.2 Where the soil around any tree is found to be compacted appropriate remediation will be undertaken. This will be prescribed by the ACoW and could include soil aeration or manual digging/forking to loosen the soil increasing drainage and aeration.

13. Conclusions

- 13.1.1 A total of 9no. individual trees and 2no. groups of trees were recorded. These include 4no. category B and 7no. category C. No category A or U retention value were recorded as part of the tree survey.
- 13.1.2 To implement the Permitted Demolition there will be no requirement for tree removal.
- 13.1.3 The Permitted Demolition will require the demolition of four existing buildings, these buildings are shown on drawing A002 in appendix 4. The demolition encroaches into the RPA of T1 (horse chestnut), T7 (wild cherry) and T8 (boxelder). However, the RPA of all three trees is under well-established hard standing from the footprint of the respective, neighbouring building.
- 13.1.4 The Permitted Demolition is not considered to have an impact on the amenity of the Site or the surrounding area.
- 13.1.5 As all of the surveyed trees are to be retained, the Permitted Demolition is considered to be in line with the Royal Borough of Kingston Upon Thames 'Core Strategy'.

14. Recommendations

- 14.1.1 Prior to any works being undertaken on-site an Arboricultural Clerk of Works (ACoW) must be appointed to meet with all site personnel and do a toolbox talk in relation to the trees, their physical protection and works within the Construction Exclusion Zones (CEZ).
- 14.1.2 It is recommended that the ACoW undertakes the Site observation and monitoring works on a monthly basis throughout the demolition process.
- 14.1.3 It is critical that all protective fencing is installed and erected and that the CEZ is enforced prior to the commencement of any works on-site. Following installation of tree protection, a site meeting will be undertaken with the Tree Officer to ensure satisfaction of all parties.
- 14.1.4 The Permitted Demolition of the four existing buildings should be undertaken following the installation of tree protective barriers/fencing, which will be done prior to commencement of operations. This will ensure plant and vehicles engaged in the demolition process will operate outside of RPAs of trees to be retained. Clause 7.3.4 of BS5837:2012 suggests; where trees stand adjacent to structures to be removed, the demolition should be undertaken inwards within the footprint of the existing building (often referred to as a "top down, pull back").
- 14.1.5 The removal of the existing paved surface within the RPA's of T1 (horse chestnut) will be observed by the ACoW. The paving will be removed by hand-dig only methods (e.g. hand-tools

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or pneumatic drill) working away from the tree and within the footprint of the adjacent building once it has been demolished.

14.1.6 The on-site trees to be retained should be proactively managed to ensure that they enhance the development and the wider environment. Therefore, this AMS provides detail of the measures and steps required to retain trees through and post development specifically through adequate supervision, tree protection and construction techniques.

14.1.7 For tree and root protection measures to work effectively all personnel associated with the construction process must be familiar with the Tree Protection Plan at Appendix 4.

15. References

British Standard 3998:2010 'Tree work – Recommendations'

British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendation'

Core Strategy Royal Borough of Kingston Upon Thames Adopted – April 2012

Green Infrastructure & Open Environments: Preparing Borough Tree and Woodland Strategies February 2013

National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' (NJUG 10, Volume 4, 2007)

National Planning Policy Framework (NPPF) 2019

The Forestry Act 1967

The Town and Country Planning (Tree Preservation) Regulations 2012

The Town and Country Planning Act 1990

16. Caveats and Limitations

16.1.1 The report is for the sole use of the Client and its reproduction or use by anyone else is forbidden unless written consent is given by the author.

16.1.2 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering, or soil.

16.1.3 This is not an arboricultural health and safety survey, a more detailed survey of internal decay detection etc. can be supplied but would be subject to a further fee.

16.1.4 This is a report which is pursuant to the discharge of planning conditions. It provides no detail specifically in relation to the health and safety of the trees.

16.1.5 All tree inspections were undertaken from ground level and no climbing inspections were undertaken.

16.1.6 Trees are growing dynamic structures. Whilst reasonable effort has been made to identify defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. No tree is ever absolutely safe due to the unpredictable laws and forces of nature. As a result of this, natural failure of intact trees will occur; extreme climatic conditions can cause damage to even apparently healthy trees.

16.1.7 Trees are living organisms whose health, condition and structure can change quickly and without warning. Therefore, the contents of this report are valid for a period of one year from the date of this survey.

16.1.8 On undertaking the recommended works, the arborist/tree surgeon must without delay report

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any defects that become apparent while climbing or working on the tree/s in question. Those defects must be reported immediately to the relevant project manager, landowner and/or the author of this report to enable the appropriate remedial action.

- 16.1.9 This is an arboricultural report and therefore does not rely on ecological or archaeological data. If either is commented upon within the report further professional advice should be sought.

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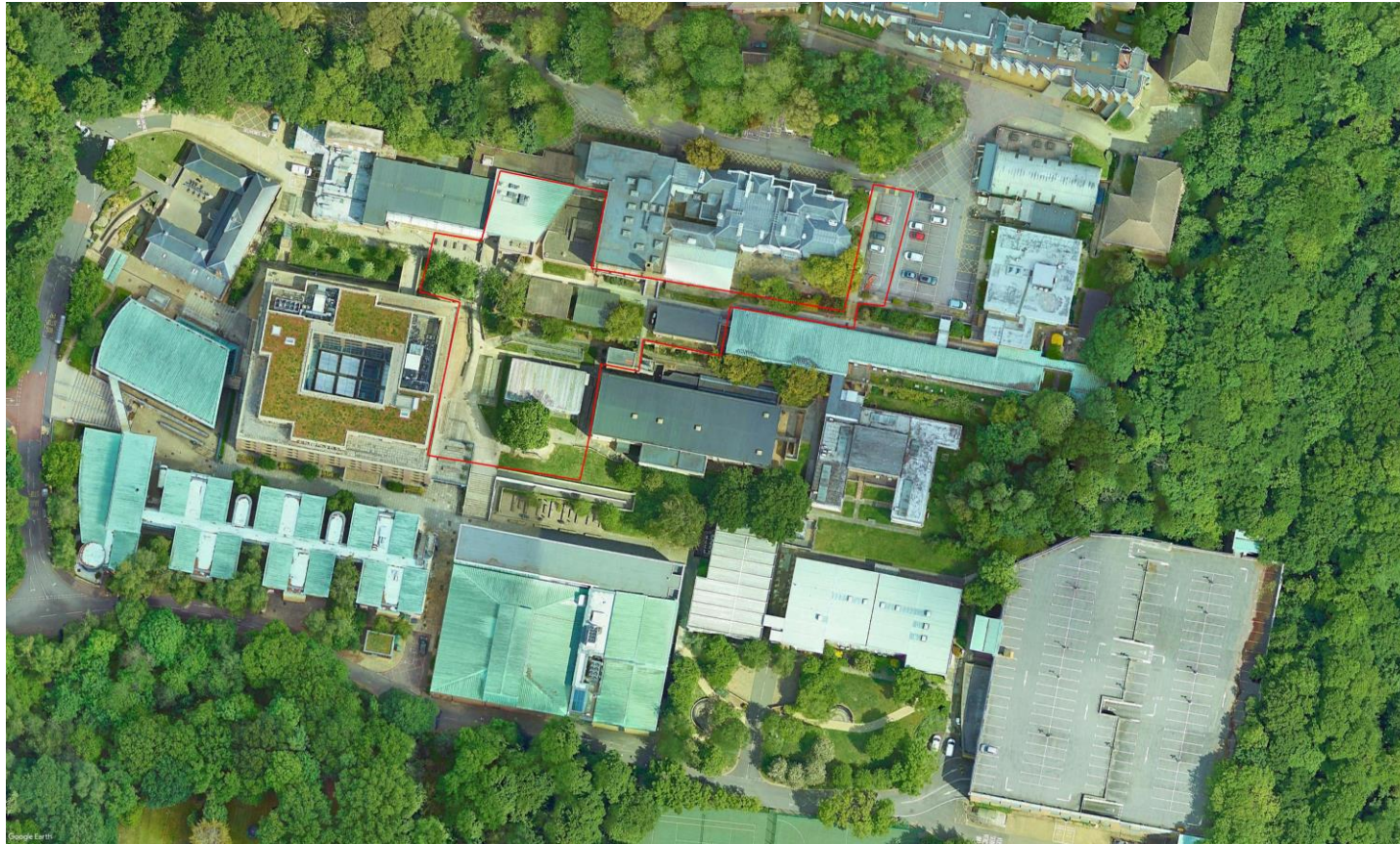


Appendix 1: Aerial Photograph

Kingston University

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Appendix 2: Survey Methodology

- i. The trees on the Site were originally surveyed without reference to the Site layout as detailed in Clause 4.4.1.1 of BS5837:2012. However, for the purposes of this AMS, the buildings identified for demolition were considered.
- ii. The position of each tree was plotted with reference to the supplied ordinance survey plan. Small trees with a stem diameter less than 75mm were generally not surveyed as they would either be easily replaced or relocated.
- iii. Each individual tree has been given a tree identification number, the groups and hedges clearly defined for the purpose of this report. Metal tags have not been used for this survey as identification on-site does not require this. The tree numbers associated with each tree are cross referenced within the schedule and plans at Appendix 3 and 4 respectively.
- iv. The tree species have been recorded with both common and botanical names.
- v. All tree heights have been assessed using a clinometer and where indicated in groups the height of the tallest tree was measured unless otherwise stated. Tree heights are given in metres.
- vi. All stem diameters were measured at 1.5 metres above ground level and are given in millimetre units (unless otherwise stated where "gl" is an abbreviation for ground level where diameter was measured just above root flare, "est" is an estimate and "av" is an average).
- vii. The canopy spread is recorded in either the four cardinal points or is given as an average diameter for the crown, especially in groups or where the crown is evenly weighted. Canopy spreads are measured in metres.
- viii. The height of the ground clearance is given in metres and is an estimate of the height of the first branch above ground level.
- ix. In absence of detailed information on the age the following classification has been used:
 - Yng** Young trees age less than 1/3 life expectancy;
 - Mid** Middle age trees 1/3 – 2/3 life expectancy;
 - Mat** Mature trees over 2/3 life expectancy;
 - O/mat** Over-mature – declining or moribund trees of low vigour; and
 - Vet** Veteran trees – specimens exhibiting features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.
- x. Age class is indicative and will vary between species.
- xi. The structural condition of the trees has been assessed and is summarised as:
 - Good** Few minor defects of little overall significance;
 - Fair** A significant defect or several small defects; and
 - Poor** Major defect present or many small defects.
- xii. The physiological condition has been recorded to provide an indication of the tree's general health and vitality. The trees have been described thus:
 - Good** Generally in good health typical of the species;
 - Fair** Reasonable health with few defects;

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Poor Trees that exhibit significant defects which are irremediable or moribund tree; and
Dead Tree has died.

- xiii. Each tree was individually assessed and comments, where appropriate, were recorded for the condition of each tree's roots, main stem, and crown.
- xiv. General comments have also been made where appropriate, with recommendations when relatively immediate works are given.
- xv. Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of the tree's potential safe useful life expectancy. The remaining contribution in years has not always been directly followed in relation to the retention categories of the trees as trees may have a long remaining life however be of little significance in terms of development.

Arboricultural Method Statement


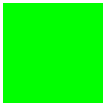


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Appendix 3: Schedules

BS5837:2012 Cascade Chart

Complete Tree Schedule

Category and Definition	Criteria (including subcategories where appropriate)			ID Colour on Plan
Trees unsuitable for retention (see Note)				
<p>Category U</p> <p>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</p>	<ul style="list-style-type: none"> • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning); • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline; and/or • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality. <p><i>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>			<p>Dark Red (127-000-000)</p> 
Trees to be considered for retention (see Note)				
	1 - Mainly arboricultural qualities	2 - Mainly landscape qualities	3 - Mainly cultural values, including conservation	
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years.</p>	<p>Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).</p>	<p>Light Green (000-255-000)</p> 
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.</p>	<p>Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.</p>	<p>Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.</p>	<p>Trees with material conservation or other cultural value.</p>	<p>Mid Blue (000-000-255)</p> 
<p>Category C</p> <p>Trees of low quality currently in adequate condition with at least 10 years life expectancy, or young trees with a stem diameter below 150mm.</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories</p>	<p>Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.</p>	<p>Trees with no material conservation or other cultural value.</p>	<p>Grey (091-091-091)</p> 

BS5837:2012 Tree Schedule

Client Name: Turnberry Planning
 Site: Kingston University
 Ref No: 210422 1265 TS V1

Consultant: D. Hickton
 Survey Date: April 2021



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m ²)	RPA Radius (m)
						N	E	S	W										
INDIVIDUAL TREES																			
T1	306	Horse chestnut	<i>Aesculus hippocastanum</i>	12	770	6	6	6	7	2.5	E/Mat	Fair	Fair	Specimen located to the south of the adjacent Dance Hall. Multi stemmed at c.0.5m from ground with acute union. Minor bleeding on the northern stem at c.1.5m from ground level, consistent in appearance with bleeding canker of horse chestnut. Slight cracking of the cambium near bleeding with associated slime flux, typical of species. Lower branches have historically been pruned back to principle stems. Good upright form with uniform canopy spread. Of moderate arboricultural merit, with medium to long term retention value. A feature tree set in the centre of the campus.	No works required at time of assessment	20 to 40 years	B1, 2	272	9.3
T2	411	Silver birch	<i>Betula pendula</i>	8	120	2	3	2	2	1.5	S/Mat	Good	Good	Single stem specimen located adjacent to steps to the north east of adjacent Dance Hall. Tall drawn up form, with good radial canopy. Of limited arboricultural merit, adds character to the grassed boarder.	No works required at time of assessment	20 to 40 years	C1, 2	7	1.5
T3	4459	Goat willow	<i>Salix caprea</i>	7	151	2	3	3	3	2	S/Mat	Good	Fair	Multi stemmed specimen abutting adjacent wall. Located to the north of neighbouring Dance Hall. Stems in contact with brick wall. Of low arboricultural merit with limited long term retention value	No works required at time of assessment	10 to 20 years	C2	10	1.8
T4	4458	Common fig	<i>Ficus carica</i>	4	90	0	2	1	2	0	S/Mat	Good	Fair	Specimen located adjacent to footpath below the computer centre. Suckered growth at the base of the stem. Stem is being propped up. Of limited arboricultural merit, does add character to the grassed edge	No works required at time of assessment	10 to 20 years	C2	5	1.2
T5	1179	Southern magnolia	<i>Magnolia grandiflora</i>	10	626.9	2	7	4	7	2	Mat	Good	Fair	Multi stemmed specimen adjacent to footpath abutting brick wall. Acute unions associated with stem at ground level. Low, lateral spreading canopy that has been regularly cut back from the adjacent building to the north. Asymmetrical form. Of good arboricultural merit, however of limited long term retention considering the impact incremental stem pressure will ultimately cause to the retaining wall.	No works required at time of assessment	20 to 40 years	B1, 2	177	7.5
T6	No tag.	Wild cherry	<i>Prunus avium</i>	7	130	1	2	3	3	2	S/Mat	Good	Good	Single stem specimen located at the top of thr grassed Bank adjacent to footsteps. Lower northern section of the canopy has been nsympathetically cut back. Canopy biased to the south. Of limited arboricultural value. Adds character to the grassed boarder.	No works required at time of assessment	20 to 40 years	C1, 2	7	1.5
T7	No tag.	Wild cherry	<i>Prunus avium</i>	6	363.59	8	7	6	5	1	Mat	Fair	Fair	Twin stemmed specimen located to the west of hut 2. Sucker growth present. Acute unions at base of stems. Minor bleeding at cambium near base of twin stems. Unsympathetically cut back from adjacent structure. Undesirable form with reduced vigour at branch tips. Long, slender outstretched limbs. Unremarkable specimen, of limited arboricultural merit.	No works required at time of assessment	10 to 20 years	C2	64	4.5
T8	1178	Boxelder	<i>Acer negundo</i>	8	230	5	5	4	4	2	S/Mat	Good	Good	Single stem specimen located to the east of hut 1 in grassed area. Stem bifurcates at c.3m from ground level. Broad radial canopy. Tips in contact with adjacent structure. Of moderate arboricultural merit, has the potential to contribute to the landscape in the medium to long term.	No works required at time of assessment	20 to 40 years	B1, 2	23	2.7
T9	4691	Southern magnolia	<i>Magnolia grandiflora</i>	11	920.98	2	7	8	8	3	Mat	Fair	Fair	Twin stemmed specimen located to the south of Kenry House. Cavities associated with base of stems, extent of decay unknown. Concrete embedded at base. Tree leans to the south, canopy is significantly biased. Recently reduced in size. Tip dieback in upper, western portion of the canopy. Of moderate arboricultural merit, a key component within the immediate landscape.	No works required at time of assessment	20 to 40 years	B1, 2	387	11.1

BS5837:2012 Tree Schedule

Client Name: Turnberry Planning
 Site: Kingston University
 Ref No: 210422 1265 TS V1

Consultant: D. Hickton
 Survey Date: April 2021



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m ²)	RPA Radius (m)
						N	E	S	W										
TREE GROUPS																			
G1	No tag.	Common hazel, Whitebeam, Viburnum species	<i>Corylus avellana, Sorbus aria, Viburnum sp.</i>	2 - 7	20 - 320	2	2	2	2	0	S/Mat	Fair	Fair	Mixed species shrub bed located adjacent to footpath alongside the Terrace building. Ivy associated with several stems. Currently being managed as a hedge in parts. Of low arboricultural merit, however does add character to the internal border.	No works required at time of assessment	20 to 40 years	C2	48	3.9
G2	No tag.	Common alder, Wild cherry, Swedish whitebeam	<i>Alnus glutinosa, Prunus avium, Sorbus intermedia</i>	3 - 7	90 - 220	3	3	3	3	1	S/Mat	Good	Good	Group of mixed specimens located along grassed embankment adjacent to the business school building. Frequently cut back from adjacent footpath. Individually of limited arboricultural merit, collectively adds height to the embankment.	No works required at time of assessment	20 to 40 years	C1, 2	23	2.7

Arboricultural Method Statement

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REF NO: 210422 1265 AMS V1







Appendix 4: Plans

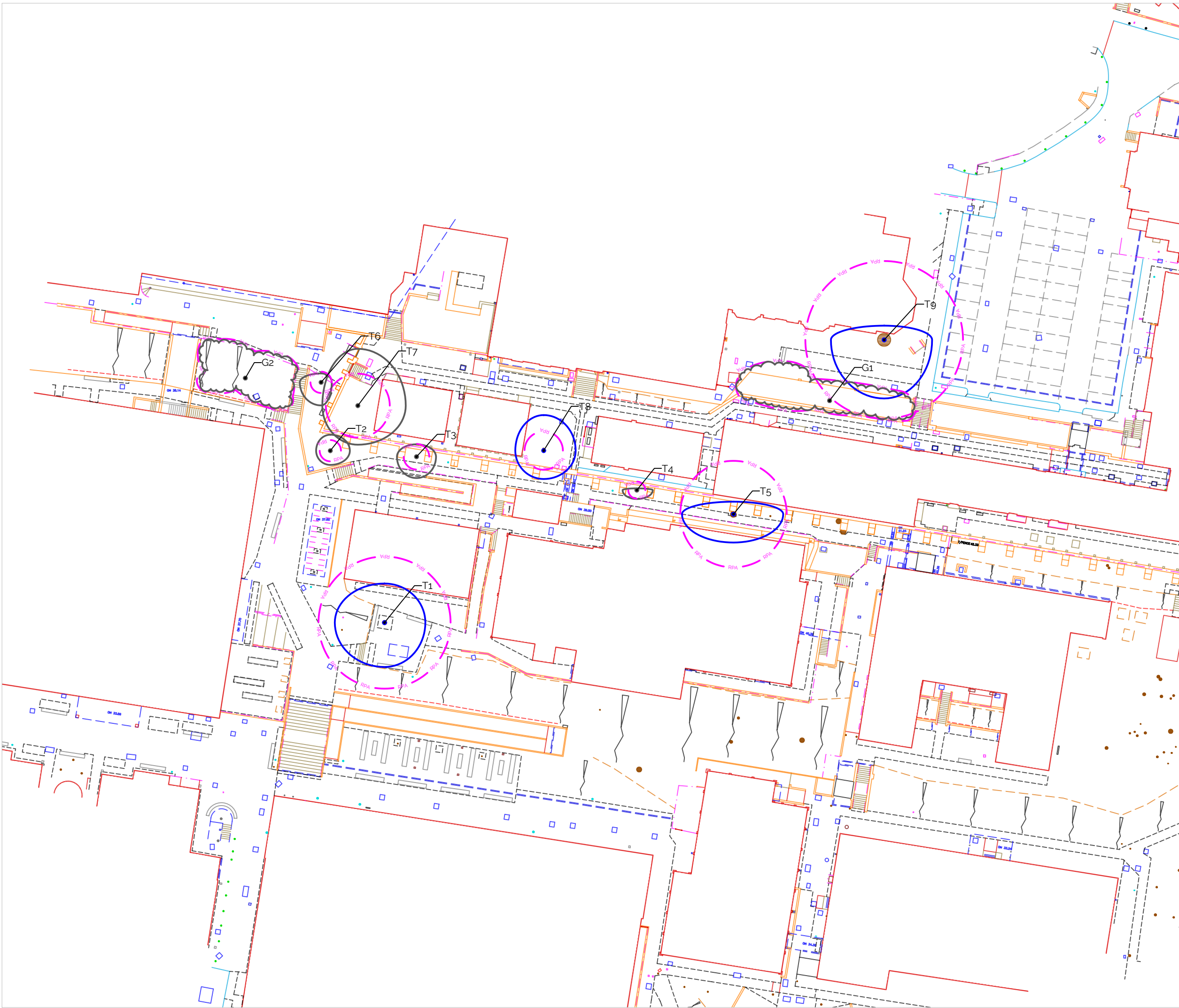
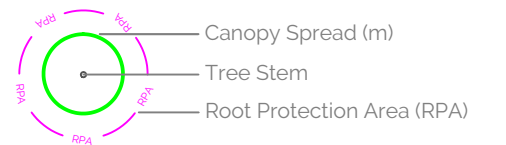
Tree Constraints Plan (A001)

Arboricultural Impact Plan (A002)

Tree Protection Plan (A003)



-  A Category Trees / High Retention Value
-  B Category Trees / Moderate Retention Value
-  C Category Trees / Low Retention Value
-  U Category Trees / Remove



This TCP is created as a design tool and does not make an assessment of the impacts or subsequent effects of the Proposed Development to trees. Therefore, the TCP must not be submitted solely to inform the planning application. An Arboricultural Impact Assessment or similar report will be required to inform the planning application which the TCP may form part of.

Date: April 2021

Client: Turnberry Planning

Project: Kingston University

Title: Tree Constraints Plan

Map file reference	DWG No
210422 1265 TCP V1	A001

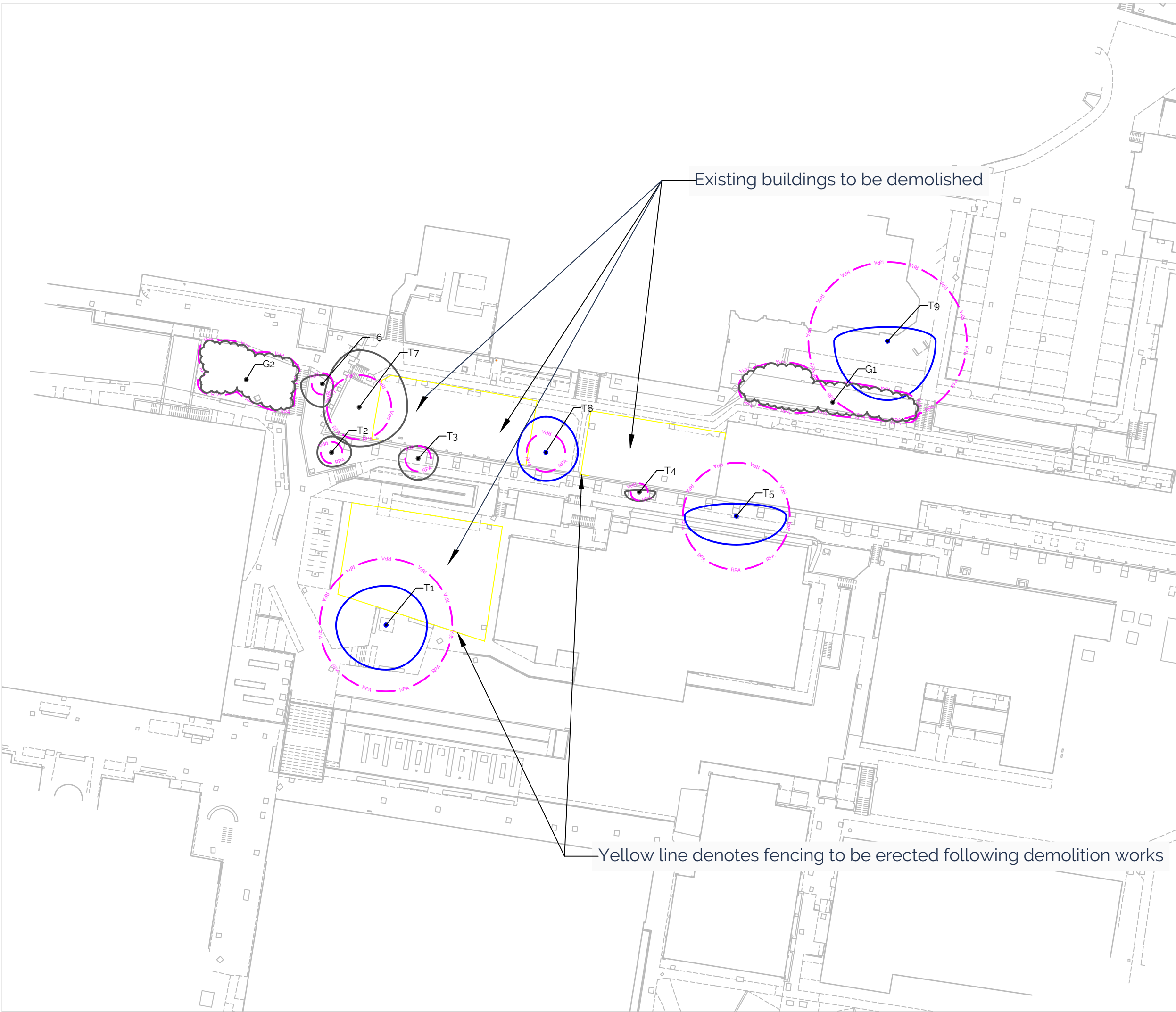
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Consultants

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-  A Category Trees / High Retention Value
 -  B Category Trees / Moderate Retention Value
 -  C Category Trees / Low Retention Value
 -  U Category Trees / Remove
-
- 
 - Canopy Spread (m)
 - Tree Stem
 - Root Protection Area (RPA)



Date: April 2021

Client: Turnberry Planning

Project: Kingston University

Title: Arboricultural Impact Plan





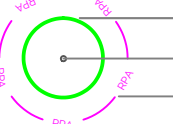


Map file reference	DWG No
210422 1265 TCP V1	A002

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-  A Category Trees / High Retention Value
-  B Category Trees / Moderate Retention Value
-  C Category Trees / Low Retention Value
-  U Category Trees / Remove
- 
 - Canopy Spread (m)
 - Tree Stem
 - Root Protection Area (RPA)
-  TPF Tree Protection Fencing
-  Construction Exclusion Zone (CEZ)

Construction Exclusion Zone - existing rail fencing considered to be sufficient and therefore further tree protection fencing not required.

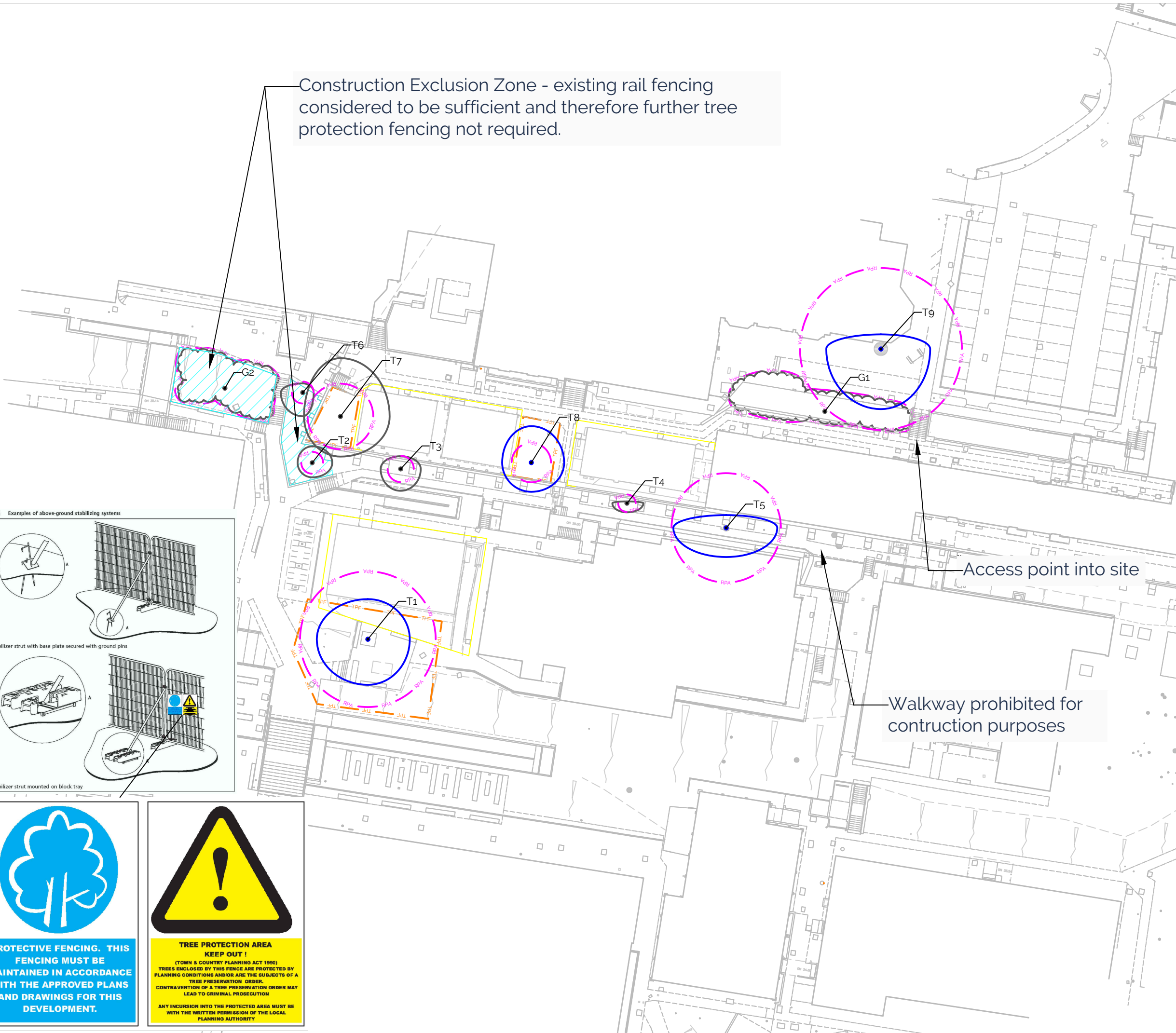
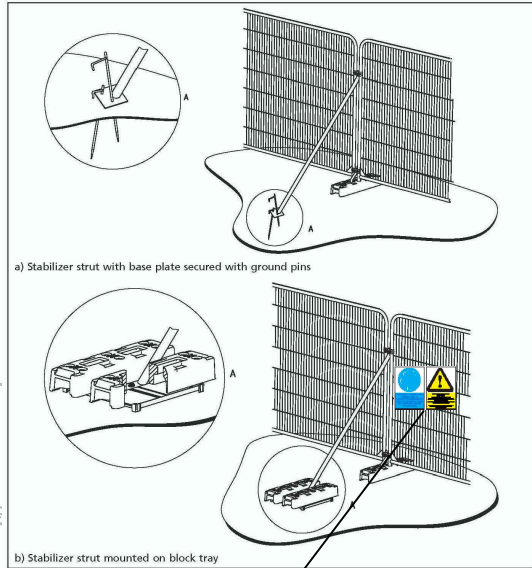


Figure 3 Examples of above-ground stabilizing systems



Access point into site

Walkway prohibited for construction purposes

Date: April 2021

Client: Turnberry Planning

Project: Kingston University

Title: Tree Protection Plan

Map file reference	DWG No
210422 1265 TCP V1	A003

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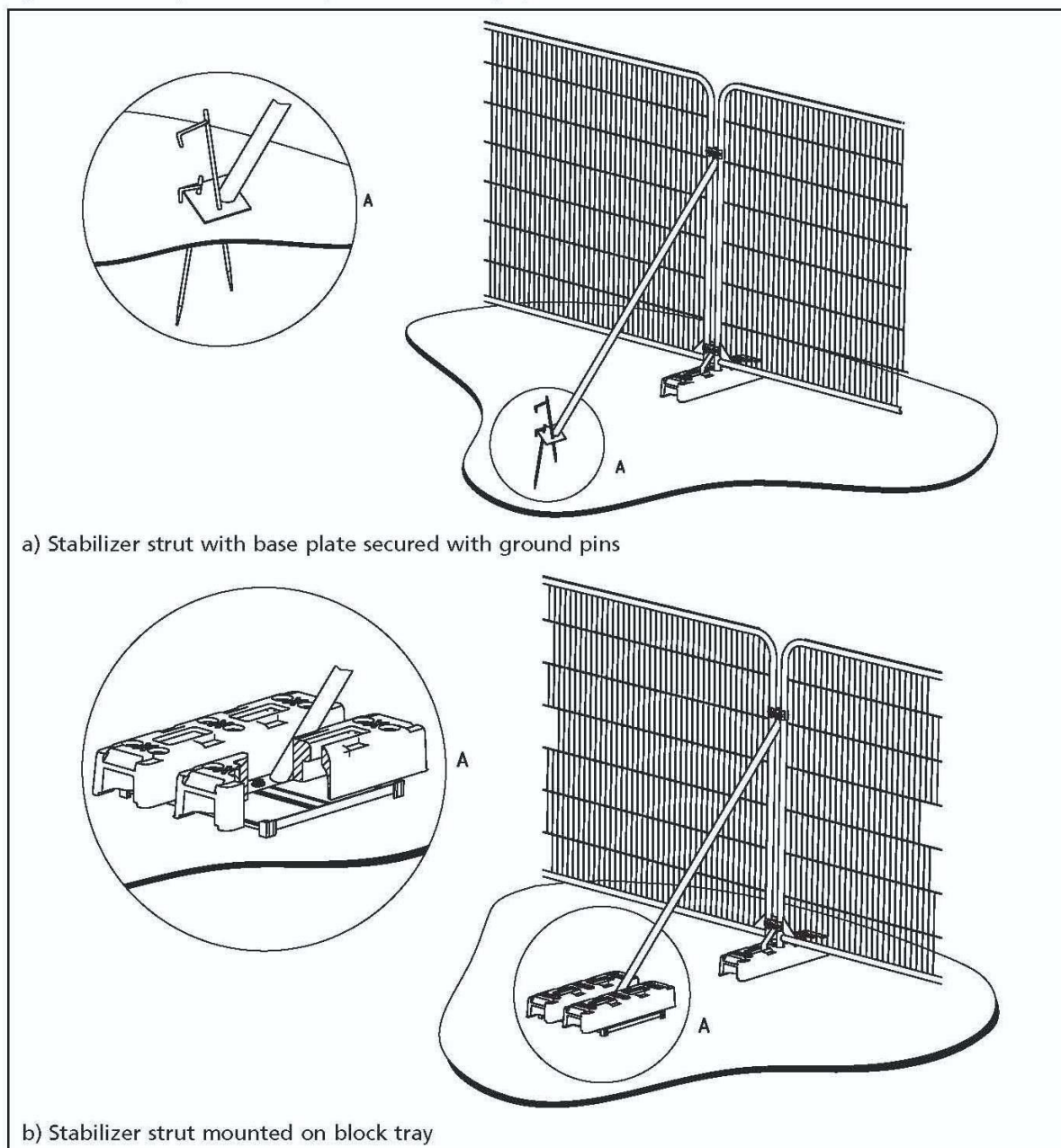
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Appendix 5: Tree Protection

Fencing Specification and Signage

Figure 3 Examples of above-ground stabilizing systems





**TREE PROTECTION AREA
KEEP OUT!**

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY
PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A
TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY
LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE LOCAL
PLANNING AUTHORITY



**PROTECTIVE FENCING. THIS
FENCING MUST BE
MAINTAINED IN ACCORDANCE
WITH THE APPROVED PLANS
AND DRAWINGS FOR THIS
DEVELOPMENT.**

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Trees
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