



Arboricultural Method Statement

Signature Highgate
58 The Bishops Avenue
London
N2 0BE

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CONTENTS PAGE

1	INTRODUCTORY INFORMATION	4
	INSTRUCTION	4
	REPORT METHODOLOGY AND GUIDANCE	4
	LIMITATIONS	4
	PLANNING LAW AND DUTIES	4
	DEFINITIONS	5
	RELEVANT PLANS AND DOCUMENTS	6
2	SEQUENCE OF OPERATIONS AND SITE MONITORING	7
	SEQUENCE	7
	SYSTEM OF MONITORING	7
	KEY AREAS FOR MONITORING	7
	RESPONSIBILITIES	9
	CLERK OF WORKS REPORT SUBMISSION	9
	VARIATIONS	9
3	TREE SURGERY WORKS	10
	WILDLIFE AND HABITAT RESPONSIBILITIES	10
4	TREE PROTECTION MEASURES	11
	SITE-SPECIFIC PROTECTION MEASURES	11
	SPECIFICATION FOR BARRIERS	11
	SPECIFICATION FOR GROUND PROTECTION	13
	ADDITIONAL PRECAUTIONS	14
5	SITE INDUCTION AND SUB-CONTRACTORS	16
6	SITE LOGISTICS	17
	SITE ACCESS	17
	COMPOUND AREA AND WELFARE FACILITIES	17
	INTERNAL TRAFFIC ROUTEING	18
	TEMPORARY SERVICES	18
7	DEMOLITION ACTIVITIES	19
	HARD STANDING AND SURFACES	19
	LIGHT STRUCTURES	20
	BUILDINGS AND FOUNDATIONS	20
8	CONSTRUCTION ACTIVITIES	22
	PHASING OF WORKS	22
	HARD STANDING AND SURFACES	22
	FOUNDATIONS AND GROUND WORKS	24
	SCAFFOLDING AND SUPERSTRUCTURE	25
	LIGHT STRUCTURES	26
9	SERVICES, DRAINAGE AND UTILITIES	28
	GENERAL TECHNICAL DETAILS	28
	NEW SERVICES AND DRAINAGE - GENERAL	28
	NEW SERVICES AND DRAINAGE - AIR SPADING	28
10	LANDSCAPING ACTIVITIES	31
	USE OF MACHINERY AND TOOLS	31
	REMOVAL OF TREE PROTECTION MEASURES	31
	PLANTING OF VEGETATION	32
	SOIL LEVELS	32

1 INTRODUCTORY INFORMATION

Instruction

- 1.1 This Arboricultural Method Statement ('AMS') has been instructed by Fed3 Projects Ltd, in order to discharge planning conditions with regard to tree protection matters at 58 The Bishops Avenue.

Report methodology and guidance

- 1.2 This AMS has been provided to assist all parties involved in the planning process and has been prepared following a survey of the trees and other vegetation in accordance with British Standard 5837 - Trees in relation to design demolition and construction - Recommendations (2012)¹, hereafter referred to as 'BS5837'. The purpose of this AMS is to provide the methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree to be retained.
- 1.3 BS5837 more broadly provides recommendations and guidance for arboriculturists, architects, builders, engineers, and landscape architects. It is also expected to be of interest to land managers, contractors, planners, statutory undertakers, surveyors, and all others interested in harmony between trees and development in its broadest sense.
- 1.4 BS5837 also refers to the NJUG guidance² as a normative reference, to be used in circumstances relating to the installation of services. This AMS therefore refers to this guidance.

Limitations

- 1.5 This AMS is not an *Arboricultural Impact Assessment* ('AIA'). Therefore, it does not cover the issue of tree loss and mitigation. This AMS instead covers the methods of work within proximity to retained trees.
- 1.6 This AMS does not provide information and guidance, relating to the management of trees in the context of health and safety. Any specified tree works pertain strictly to the development process, unless otherwise stated.

Planning law and duties

- 1.7 There are various relevant statutes that must be considered and adhered to as part of this AMS. These include but may not be limited to the following statutes.
- 1.8 The Town and Country Planning Act 1990 requires development to be undertaken in accordance with its stipulations. Where a decision notice exists, the development must

1 - BSI. (2012) British Standard 5837: Trees in relation to design, demolition and construction - Recommendations. UK: British Standards Institution.
2 - NJUG. (2007) Volume 4: Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees - Issue 2. UK: National Joint Utilities Group.

be undertaken in accordance with its details, including those details discharged by way of condition, restricted by way of limitation or amended through a non-material amendment (Section 96A) or minor amendment (Section 73). Any failure to adhere may result in enforcement action (Sections 171A and 187A) including a stop notice (Section 183). Where trees are legally protected (e.g. by way of Conservation Area designation or a Tree Preservation Order), Part VIII Chapter I of this Act also applies and to which all relevant works must adhere to.

- 1.9 The Natural Environment and Rural Communities Act 2006 at Section 40 confirms that all statutory undertakers have a duty to protect biodiversity - this includes trees. Statutory undertakers cannot operate without appropriate consideration of trees, in the context of development activities. In normal circumstances, statutory undertakers will demonstrate compliance with the recommendations of the NJUG guidelines.
- 1.10 The Town and Country Planning (Tree Preservation)(England) Regulations 2012 applies further restriction on trees protected by statute. Tree works consented as part of a full planning application are considered an exception under Regulation 14(vii) though any amended and additional tree works must be separately consented as an addition to those works covered by the existing planning consent. Government guidance on this exemption has suggested that it can only be applied when implementing a full grant of planning permission.

Definitions

- 1.11 The following particular terms may be used within this AMS. These terms are defined by BS5837 as follows, unless otherwise clarified:
- **Arboricultural clerk of works** - *person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction*;
 - **Construction Exclusion Zone ('CEZ')** - *“area based on the root protection area from which access is prohibited for the duration of a project”* (used within this AMS interchangeably with Tree Protection Zone or TPZ);
 - **Root Protection Area ('RPA')** - *“layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority”*; and

- **Tree Protection Plan ('TPP')** - *“scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures”.*

Relevant plans and documents

- 1.12 This AMS is accompanied by relevant plans and documents that are located within the appendices. The appendices include the relevant plans (at Appendix A) and schedules (at Appendix B). Any additional plans and documents are included from Appendix C onwards and their content clarified within the main body of this AMS.

2 SEQUENCE OF OPERATIONS AND SITE MONITORING

Sequence

2.1 The sequence of operations followed as part of the development process are:

- tree removals and tree surgery work;
- installation of tree protection barriers and areas of temporary ground protection for the enabling and demolition works;
- site set up and installation of compound area and welfare facilities for demolition operations;
- demolition of main buildings and structures;
- demolition of lightweight structures including roads, footpaths etc.;
- adjustment of tree protection barriers and areas of temporary ground protection as appropriate for construction phase of development;
- adjustment of compound area and welfare facilities for construction operations;
- construction, including drainage and service installation;
- landscaping; and
- tree condition sign off.

System of Monitoring

2.2 Wherever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, an auditable system of arboricultural site monitoring is required. This includes periodic monitoring of tree protection measures and arboricultural supervision whenever development activity is to take place within the RPA.

2.3 Prior to the commencement of works, contact details of all parties will be circulated to ensure all team members are able to communicate correctly.

Key areas for monitoring

2.4 The following key / critical activities will be inspected and monitored by the appointed arboricultural clerk of works during the course of the development:

- Pre-commencement site meeting with the Site Manager.
- Mark up trees proposed to be removed.
- Sign off tree removals and tree surgery works.

- Sign off the tree protection measures for enabling and demolition works.
- **Supervise the demolition of structures close to trees (see section 7 for detail):**
 - - T43 - T45, demolition of building footings along the northern boundary.
 - - T38, T40 and T41, demolition of tennis court.
- Sign off the tree protection measures for construction works.
- Carry out site visits **every 2 months** to inspect the tree protection measures.
- **Supervision of construction excavation works within the tree RPAs (see section 8 for detail):**
 - - T22, ground works to facilitate piling for south east building corner.
 - - T37, T38 and T40, ground works to facilitate piling for north west building corner.
 - - T49, ground works to facilitate piling for south west building corner.
 - - T43 - T45, ground works to install retaining walls.
 - - T41, ground works to facilitate generator.
 - - T57, ground works to facilitate bin store.
 - - T6, ground works to facilitate sub station installation.
- **Supervision of hard surfacing and path installation within tree RPAs (see section 8 for detail):**
 - - T22, installation of no-dig path.
 - - T5 and T6, installation of pedestrian access path.
 - - T5 and T6, installation of cellular confinement system no-dig parking spaces
- **Supervision of drainage works within tree RPAs (see section 9 for details):**
 - - T5 and T6, drainage runs beneath vehicle access points.
 - - T43 - T45, drainage runs between northern boundary and building.
 - - T22, drainage run adjacent to south eastern corner and within loading bay.
 - - T41 - G52, drainage run between northern boundary and building.
 - - T38 and T37, drainage run adjacent to western edge of building.
- Pre-commencement site meeting with Landscape Contractor and Site Manager.
- Sign-off tree survey upon completion.

Responsibilities

- 2.5 The Site Manager will be responsible for the protection of all retained trees for the duration of the development project. Whenever necessary, the Site Manager will engage the arboricultural consultant to ensure trees are adequately protected.
- 2.6 The Site Manager will explain the importance of the tree protection measures to all site operatives and external sub-contractors working on site during a Site Induction. Each site operative will be made aware of the location of the designated tree protection zones and that no alterations or working operations are permitted within these protected areas without the approval of the arboricultural consultant.

Clerk of works report submission

- 2.7 It will be the responsibility of the Site Manager to ensure that the arboricultural consultant is given five working days prior notification of any works on site that have been identified as a risk to trees within this statement, so that appropriate supervision can be carried out when required.
- 2.8 Following each site visit, a site inspection report that details the works supervised and the tree protection measures on the site will be submitted by the arboricultural clerk of works to the Project Manager and Site Manager.

Variations

- 2.9 Variation from the details within this method statement can only be decided and instructed by the Site Manager in prior consultation and agreement of the arboricultural clerk of works. Any such proposal will be followed up formally for agreement with the Local Authority Tree Officer prior to the works being carried out, unless deemed as an emergency.
- 2.10 In the event of an emergency, human health and safety will be the main priority. Works that may affect trees including damage to branches, roots, and rooting areas will require the Site Manager to report to the arboricultural clerk of works immediately before any action is taken. If there is no time to report, the Site Manager must inform the Local Authority Tree Officer and client arboricultural clerk of works immediately following reasonable action.
- 2.11 It will be the responsibility of the Site Manager to ensure that these protocols are complied with, and in all other situations strict adherence to this method statement is complied with.

3 TREE SURGERY WORKS

- 3.1 Only the tree works that have been specified within this report may be undertaken. The arboricultural clerk of works will be contacted, to advise on the appropriate response, in the event of any proposed alterations to the specified tree works.

Wildlife and habitat responsibilities

- 3.2 All tree works will be undertaken in full accordance with the requirements of the *Wildlife and Countryside Act 1981* (as amended), the *Habitat Regulations 2010* and *The Conservation of Habitats and Species Regulations 2017*. These regulations make it an offence to, for example:
- intentionally or deliberately kill, injure, or capture protected species;
 - deliberately disturb protected species;
 - damage, destroy, or obstruct access to a structure used for shelter or protection by a protected species;
 - take, damage, disturb, or destroy the nest of any bird either in use or being built;
 - take or destroy the egg of any wild bird; or
 - damage, destroy, or obstruct access to any bat roosts.
- 3.3 It is the responsibility of the relevant individuals and organisations, to ensure that no protected species are harmed, whilst undertaking the consented tree works. Should there be any degree of concern, regarding compliance with statutory requirements, the relevant works must cease, and a professional ecologist consulted before the works re-commence.

4 TREE PROTECTION MEASURES

Site-specific protection measures

- 4.1 Development requires the installation of Tree Protection Barriers and Temporary Ground Protection to safeguard retained trees throughout the Demolition and Construction phase of construction.
- 4.2 The locations of all tree protection measures are highlighted on the Tree Protection Plans 190431-P-12, P-13/.01 at Appendix A. Alternatives to those shown must be agreed in advance by the client approved arboricultural clerk of works.

Specification for barriers

- 4.3 Protective fencing will be constructed of robust barriers fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees. Barriers should be maintained to ensure that they remain rigid and complete.
- 4.4 Barriers will consist of 2m tall welded mesh panels on rubber or concrete feet. Fencing panels should be joined together using a minimum of two anti-tamper couplers, which are installed so that they can only be removed from inside the fence. The distance between the 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 is attached to a base plate and is secured with ground pins, refer to image 1. Where the use of ground pins is not possible, the stabilizer struts should be mounted on a block tray.
- 4.5 Signs will be fixed to every third panel stating, Tree Protection Area Keep Out – Any incursion into the protected area must be with the agreement of the local authority or arboricultural clerk of works’.

Figure 3 Examples of above-ground stabilizing systems

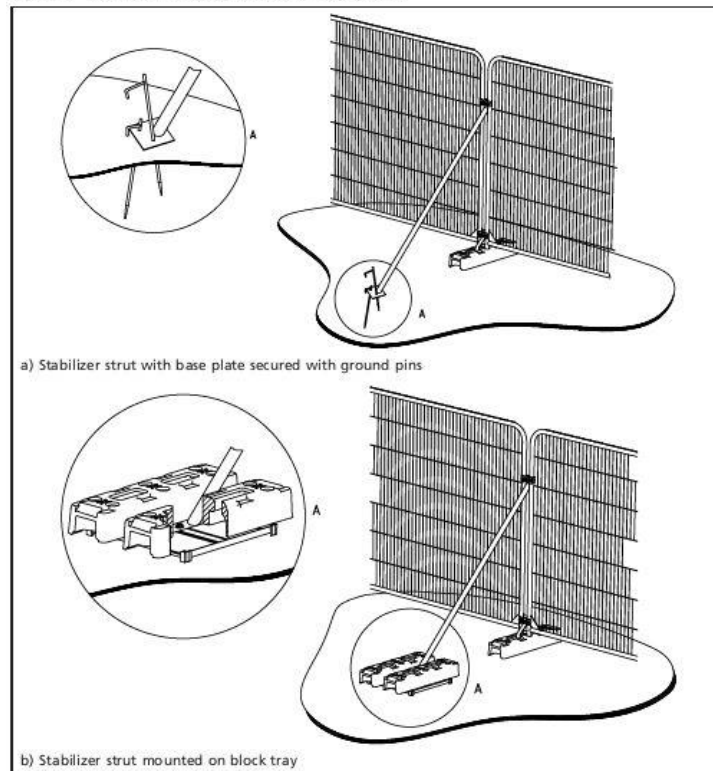


Image 1 - Protective fencing, ground stabilizing image: Image sourced from BS5837: Trees in relation to design, demolition and construction - Recommendations



Image 2 - Protective fencing, in this image heras fencing is secured with a knee rail.

Specification for ground protection

- 4.6 Temporary ground protection for pedestrian-operated plant up to a gross weight of 2 t, will consist of inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane, or existing hard surfacing. Refer to image 4.
- 4.7 Ground protection for pedestrian operated plant will be required in various areas across the site during construction, most notably along the northern boundary and adjacent to the western edge of the building and within the RPA of T34 located centrally on the site to allow sufficient working room for construction. The areas are indicated with orange hatching on the tree protection plan 190431-P-13.
- 4.8 Ground protection will need to be removed to facilitate supervised excavation works for drainage and construction but must remain in place prior to the works.

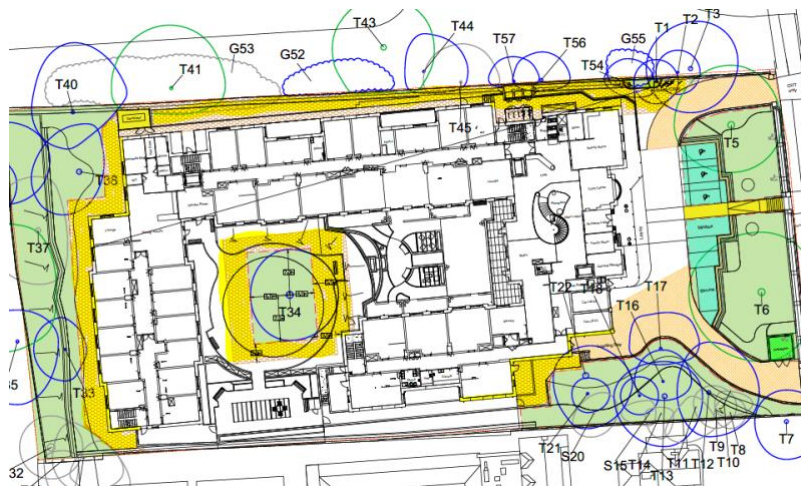


Image 3 - The highlighted areas indicate the location of ground protection required during construction.



Image 4 - Ground protection: Interlocking ground protection mats can be used to reinforce hard surfacing or laid over a compressible layer to support the anticipated load of plant machinery

Additional precautions

- 4.9 Where required, pre-development tree work may be undertaken before the installation of tree protection measures, with the agreement of the arboricultural clerk of works or local planning authority, if appropriate.
- 4.10 No alteration, removal or repositioning of the tree protection will take place without the prior consent of the arboricultural clerk of works, and it will be the site managers responsibility to ensure that all site operatives are made aware of this requirement prior to starting work on site.
- 4.11 Prior to the commencement of works, the proposed Tree Protection Barriers and/or Temporary Ground Protection measures must be inspected and signed off by the arboricultural clerk of works.
- 4.12 No materials, vehicles, plant or personnel will be permitted into the Tree Protection Zones at any time without the prior consent of the arboricultural clerk of works.
- 4.13 Any liquid materials spilled on site will be immediately cleared up and removed from the site. If liquid fuel or cement products are spilled within 2m of the Tree Protection Zone, the contractor will report the incident to the arboricultural clerk of works immediately.

- 4.14 The contractor will report any damage to trees, hedges or shrubs, whether caused by construction activities or from any other cause, to the arboricultural clerk of works immediately.

5 SITE INDUCTION AND SUB-CONTRACTORS

- 5.1 It will be the responsibility of the Site Manager to ensure that all protocols within this document are complied with strict adherence to this method statement.
- 5.2 A copy of this method statement and appended tree protection plans must be available on site, printed to scale and easily accessible within the site office.
- 5.3 Tree protection measures and the implications associated with wilful damage to trees subject to planning conditions must form part of the site induction of sub-contractors as responsibility will ultimately lie with the site management team.
- 5.4 Any variation to the measures and protocol specified in this document will require prior engagement with the arboricultural clerk of works and potentially the Local Authority, as detailed in section 3.

6 SITE LOGISTICS

Site access

- 6.1 Site access during construction will utilise the existing routes, levels and surfacing. Where anticipated loads will significantly increase during construction (private vehicle to heavy plant) the use of interlocking ground protection mats will be required.

Compound area and welfare facilities

- 6.2 Site cabins, welfare facilities and storage areas required within the root protection area of retained trees will be implemented to facilitate the requirements of the site without impacting on the health and condition of the trees.
- 6.3 Facilities and storage will need to be positioned above ground existing ground level and placed on ground protection measures suitable to withstand the proposed load without compaction to the underlying soil. For site cabins and containers this may include foundation pads and/or railway sleepers.
- 6.4 There must be sufficient clearance between the units and the crown of the trees to ensure successful installation and removal without damaging lower branches.



Image 5 - Containers and welfare units within RPA 1: Storage containers and welfare units may be placed and supported on above-ground structures such as pads, blocks and scaffolding.

Internal traffic routeing

- 6.5 Internal traffic routeing of plant machinery and vehicles must respect the tree protection areas and location of tree protection fencing. Vehicle access roads and tracks must avoid tree protection areas unless already managed with sufficient ground protection as part of site wide tree protection measures.
- 6.6 Changes to pedestrian traffic routeing as the site develops may be accommodated within tree protection areas where appropriate ground protections measures are agreed with the arboricultural clerk of works and emplaced. Contact with the arboricultural clerk of works will be required prior to amendments of tree protection.

Temporary services

- 6.7 Temporary services are to be installed above ground within tree protection areas. Where this is not possible excavations must be in accordance with NJUG Vol. 4, incorporating hand-dug or trenchless techniques retaining roots greater than 25mm diameter. Further detail services installation is provided in section 10 of this document.

7 DEMOLITION ACTIVITIES

- 7.1 The demolition phase of the development will require that the following works in close proximity to retained trees are managed in order to prevent damage to the trees or their rooting environment:
- removal of existing hard standing and surfaces;
 - removal of timber sheds / outbuildings;
 - removal of boundary treatments, including walls and fencing;
 - removal of garages / outbuildings;
 - removal of buildings; and
 - removal of foundations
- 7.2 The coordination and timing of the proposed demolition works required to be carried out within the RPAs of retained trees or adjacent to their crown extent must be discussed and agreed with the arboricultural clerk of works prior to any working activities being carried out on the site. This is to ensure no rooting areas are left exposed and vulnerable to potential damage during or following these works.

Hard standing and surfaces

- 7.3 The removal of existing hard standing and surfaces is required within the RPAs of retained trees T38, T40 and T41 as highlighted on the Tree Protection Plan at Appendix A.
- 7.4 All working operations within tree RPAs are required to be carried out under the guidance and supervision of the arboricultural clerk of works.
- 7.5 Prior to works commencing, trial holes will be excavated using hand-held tools within the RPA of the tree concerned to establish depth of the existing hard surface material. The results from these trial holes will inform how working operations will be undertaken and whether machinery is permitted.
- 7.6 The use of machinery to fracture and remove waste material will only be permitted if approved by the supervising arboricultural clerk of works and under the careful guidance of a banksman.
- 7.7 Works will commence at the point closest to the tree and operate backwards until outside the designated RPA to avoid moving over exposed ground.

- 7.8 Working from either outside the designated RPA or from an area of existing hard standing or temporary ground protection, the upper surface layer of hard standing will be fractured into small sections.
- 7.9 Broken material will be manually lifted and removed to a designated storage area located outside the RPA of retained trees.
- 7.10 The removal of the sub-base material will be undertaken in a careful manner, ensuring that no excavation works occur beyond the depth of the built material and into the soil layer below.
- 7.11 Any roots exposed due the removal of hard standing will be covered with a layer of topsoil and the area irrigated to prevent root desiccation from occurring. An irrigation programme will be required where working operations are not due to commence immediately.
- 7.12 Temporary ground protection or tree protection barriers will be installed to safeguard the exposed rooting area of the tree until the new hard surface material is installed.

Light structures

- 7.13 Where fencing and other boundary treatments or light structures are within Tree Protection Zones (TPZs) the following methodology will be followed.
- Tree protection measures will be removed to allow for the working room required.
 - Manual demolition of the structures will be carried out using suitable hand held tools, for concrete footings these will be broken into smaller sections and carefully lifted to avoid tearing any significant roots.
 - No machinery will enter the protection area without prior discussion with and agreement of the appointed arboricultural clerk of works.
 - All debris will be transported out of the protection area using wheelbarrows, or placed into a waiting vehicle parked outside the tree protection fence.
 - Demolition of footings and boundary treatments will remove the debris to sub-base level only; no excavation into virgin ground will take place.
 - Upon completion the area will be clear of all debris, protection measures will be replaced as required for main construction works.

Buildings and foundations

- 7.14 The removal of building foundations is required within the RPAs of retained trees T43 - T45 as highlighted on the Tree Protection Plan at Appendix A.

- 7.15 All working operations with tree RPAs are required to be carried out under the guidance and supervision of the arboricultural clerk of works.
- 7.16 The use of plant machinery to fracture and remove footings within RPAs will only be permitted under supervision of the arboricultural clerk of works and under the careful guidance of a banksman.
- 7.17 Working from within the demolished building footprint from an area of existing hard standing or temporary ground protection, mechanical breakers will be used to fracture the upper surface and building footings into small sections.
- 7.18 Broken material will be manually lifted and removed, or pulled back using an excavator under supervision where appropriate, to a designated storage area located outside the RPAs of retained trees.
- 7.19 The removal of the sub-base and building footings will be undertaken in a careful manner, ensuring that no excavation works occur beyond the depth of the built material and into the soil layer below.
- 7.20 Any roots exposed due the removal of hard standing will be covered with a layer of topsoil and the area irrigated to prevent root desiccation from occurring. An irrigation programme will be required where working operations are not due to commence immediately.

8 CONSTRUCTION ACTIVITIES

Phasing of works

- 8.1 The construction phase of the development will require the following working operations in close proximity to retained trees:
- hard standing and surfaces.
 - lightweight structures.
 - boundary treatments, including walls and fencing.
 - foundations.
 - buildings.
- 8.2 The coordination and timing of the proposed construction works required to be carried out within the RPAs of retained trees or adjacent to their crown extent must be discussed and agreed with the arboricultural clerk of works prior to any working activities being carried out on the site. This is to ensure no rooting areas are left exposed and vulnerable to potential damage following these works.

Hard standing and surfaces

- 8.3 Construction will involve the introduction of new hard surfacing within the RPA of T5 / T6 and T22.
- 8.4 All areas of hard surfacing within these RPAs will require the use of cellular confinement systems to create no-dig or minimal impact car parking spaces and foot paths. All works to create these new hard surfaces must be overseen by the arboricultural clerk of works.
- 8.5 All car parking spaces within the RPA of T5, the front of the minibus space within the RPA of T6 and the footpath adjacent to T22 will be no-dig, requiring a max 50mm scape only to meet the finished levels.
- 8.6 The footpath between T5 and T6 requires a 96mm level reduction and will be overseen to manage any fine roots at the periphery of the two RPAs.
- 8.7 The rear of the minibus space at the periphery of the RPA of T6 will require a 200mm level reduction, the two car parking spaces south of the minibus will require 150mm level reduction and the services bay will require a 200mm level reduction at the southern corner of the space.

- 8.8 The surface scrape for no-dig spaces may be undertaken using a rubber tracked mini excavator and sharp edged (not toothed) grading bucket to scrape back 50mm depth of surface vegetation.
- 8.9 Excavations along the parking edges will be undertaken by hand, working under guidance of the arboricultural clerk of works, to slowly scrape back soil and uncover any affected roots.
- 8.10 Any exposed roots will be cut cleanly at the edge of the working area to leave as small a wound as possible and where feasible, cut back to a root junction.
- 8.11 The cellular confinement system will then be stretched out over a geo textile membrane, pinned and filled with clean angular stone as per the manufacturer's instructions.
- 8.12 The surfacing materials will be added, and protection measures pushed back to the edge of the new hard surfacing.
- 8.13 Following the works an assessment of the number of roots affected will be quantified and the appropriate mitigation measures taken.
- 8.14 Mitigation measures may include surface vegetation removal, soil decompaction using compressed air, the introduction of bio-char to increase soil water retention and carbohydrates to encourage fine root growth.



Image 6 - Cellular no-dig installation 2: A geo-textile membrane is laid across the sand bed and the cellular confinement system stretched and pinned across the surface area before being filled with no-fines aggregates.

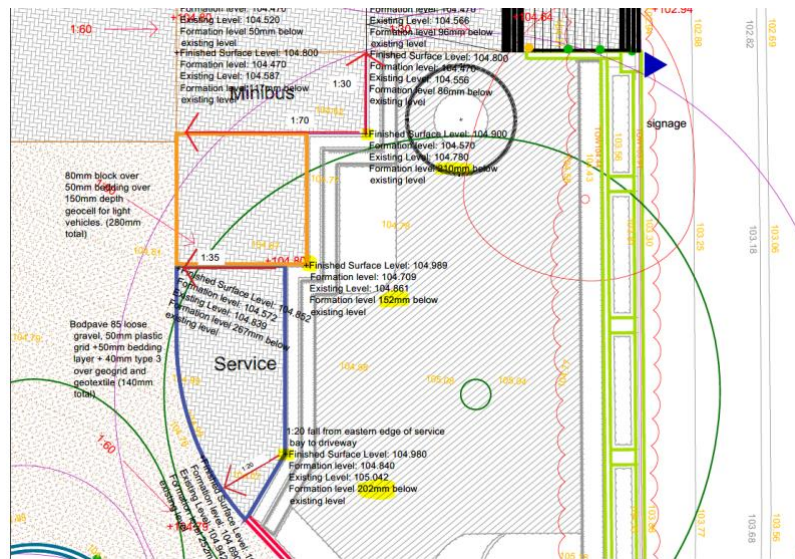


Image 7 - Surface level reductions required to install proposed parking within RPAs.

Foundations and ground works

- 8.15 Piling for basement and building formation works are required within the RPA of T22 (SE corner), T33 / T49 (SW corner), T34 (centre site), T38 / T41 (NW corner) and T45 (northern edge).
- 8.16 Excavation to facilitate a piling mat is not permitted within the tree protection zone between the trees and foundation line. A temporary above-ground piling mat will need to be constructed to support the rig within the tree protection zone.
- 8.17 The first 700mm of excavations within these locations will be supervised by the arboricultural clerk of works to ensure compliance with piling mat requirements and to keep excavations from encroaching further towards the trees.
- 8.18 Any roots exposed will be cut cleanly by the arboricultural clerk of works back to the edge of the working area, leaving as small a wound as possible.
- 8.19 Piling works will then be supervised within the location adjacent to T22 (SE corner) and T34 (centre site) to ensure a safe working distance is maintained between plant machinery and the tree.

Sub stations, bin stores and retaining walls

- 8.20 Where sub stations, bin storage and retaining walls are required within RPAs, the first 500mm will be excavated by hand under the guidance of the arboricultural clerk of works to manage exposed roots. Arboricultural supervision in the following locations:

- T6, SE site entrance.

- T41, NW corner of site.
- T43 - T45, Northern boundary.
- T56 / T57, Northern boundary.

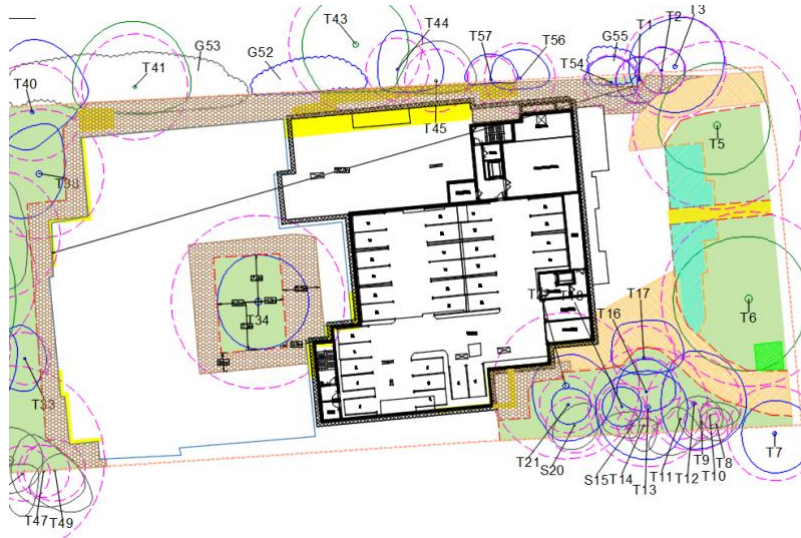


Image 8 - Areas highlighted yellow for basement, building, light structure and retaining wall construction supervision; green for the substation adjacent to T6.

Scaffolding and superstructure

- 8.21 Scaffolding will be required for the superstructure within ground protection zones in various locations across the site.
- 8.22 No excavation is permitted within the ground protection zone between the trees and the building. All scaffolding will be supported on above ground pads and incorporated into the ground protection in this location.



Image 9 - Scaffolding within tree protection zones: Scaffolding can be facilitated using blocks placed on ground protection to facilitate erection of the structure and pedestrian walkways without ground compaction.

Light structures

8.23 Any requirement for light structures within tree protection zones such as hoarding will observe the following methodology:

- Excavations will be carried manually using appropriate hand tools or using an air lance to expose tree roots.
- No machinery will be permitted into the working area unless agreed by the arboricultural clerk of works.
- All excavated spoil will be manually removed from the area or placed on temporary ground protection to be used for back filling upon completion.
- All roots in excess of 25mm in diameter and all clumps of fibrous roots will be retained and wrapped in wet hessian during the works to prevent desiccation.
- Roots less than 25mm may be pruned by the arboricultural clerk of works where deemed essential to complete works.
- Root pruning will only be carried out by the arboricultural clerk of works, using sharp, sterile tools suitable to the size of the root to be cut. Where possible roots will be pruned cleanly back to a side branch or junction.

- Where concrete is to be used (such as for fence posts) the excavated hole will be sleeved using 1000 gauge PVC sheeting to prevent concrete leaching into the surrounding soil.
- Prior to backfilling any hessian wrapping will be removed from retained roots.
- The roots will then be surrounded with topsoil, sharp sand (builders sand will not be used due to its high salt content) or other loose inert granular fill, before soil or other medium is replaced. This material should be uncontaminated and free from injurious objects.

9 SERVICES, DRAINAGE AND UTILITIES

General technical details

- 9.1 Works to install new services must appropriately consider the technical guidelines as detailed at section 7 of BS 5837, and sections 3-5 of the NJUG guidance. Any queries pertaining to these works must be raised with the arboriculturist, prior to the works being undertaken.

New services and drainage - general

- 9.2 Where new service routes are located outside of CEZs and RPAs, as shown on the TPP, the works to install new services can be undertaken without any special considerations to protect adjacent trees.
- 9.3 Should these works encroach into areas of specified ground protection or require the re-positioning of barriers, it will be necessary for the arboricultural clerk of works to be consulted, prior to the works being undertaken.

New services and drainage - air spading

- 9.4 The relevant areas where new service trenches will be excavated using a hand dig / air spade are highlighted yellow on the edited drainage layouts below. For these areas, the works will be agreed with and then supervised in full by an arboricultural clerk of works, to ensure compliance with the details specified below.
- 9.5 The areas highlighted orange are within areas of existing hard surfacing and will be excavated using plant machinery under the guidance of the arboricultural clerk of works.
- 9.6 Prior to any excavations commencing, all working areas will be set up to an acceptable specification, to enable the necessary access for machinery and plant, in addition to ensuring that adjacent trees remain sufficiently protected. This process will consider the maximum gross load of the air spade compressor, ensuring that it is at all times positioned upon firm ground - this may require temporary ground protection measures to protect RPAs and the re-positioning of barriers, which must be confirmed with the arboricultural clerk of works in advance of works being undertaken.
- 9.7 Once all working areas have been set up and confirmed as acceptable by the arboricultural clerk of works, all trenches will be excavated with hand tools or the air spade. During this process, all roots exceeding 25mm diameter will be retained, in accordance with Table 1 of the NJUG guidance - unless otherwise agreed by the

supervising arboricultural clerk of works. Roots below this diameter should be retained (i.e. pushed aside), where possible - if this is not possible, the roots must be cleanly cut with a sharp and sterile blade.

- 9.8 For roots that are retained, during the works, these roots will immediately be covered, to prevent desiccation, in accordance with section 7.2.2 of BS5837 - this may include by wrapping the roots in damp hessian or by covering the roots with an appropriate material as confirmed by the arboricultural clerk of works. Where roots are left exposed overnight, it may be necessary to undertake additional protective measures, to prevent desiccation or damage as caused by temperature changes (including frost), in accordance with section 4.1.1 of the NJUG guidance.
- 9.9 After all trench excavations are completed, new services will be installed using an appropriate method that ensures all retained roots are protected from collision impact. In the event that it is proposed to remove roots previously identified for retention, it must be confirmed in advance by the supervising arboricultural clerk of works.
- 9.10 Following the installation of the new service, the protective covering around any retained roots will be removed and the trench immediately back-filled to the original ground level in accordance with section 4.1.5 of the NJUG guidance, following which any original tree protection measures will be immediately re-instated. If required, the closed trench will be manually firmed in and seeded with grass. At no time will the closed trench be compacted with plant or machinery.

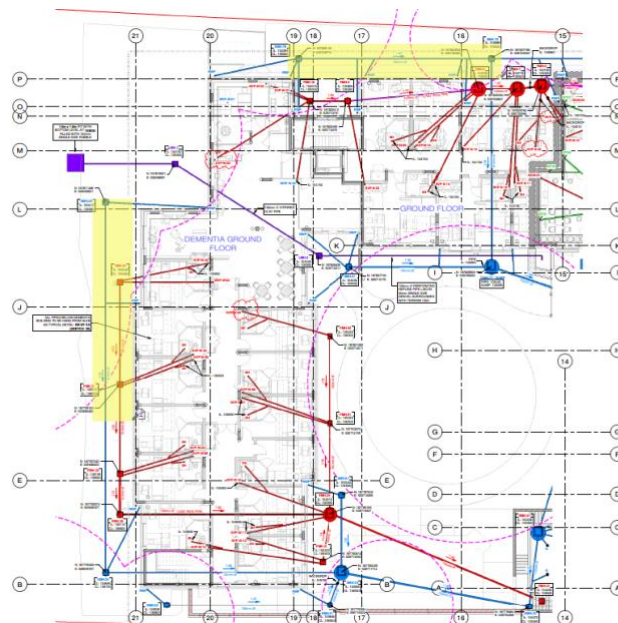


Image 10 - Areas requiring hand dig / air spade methodology to the west of the site highlighted yellow.

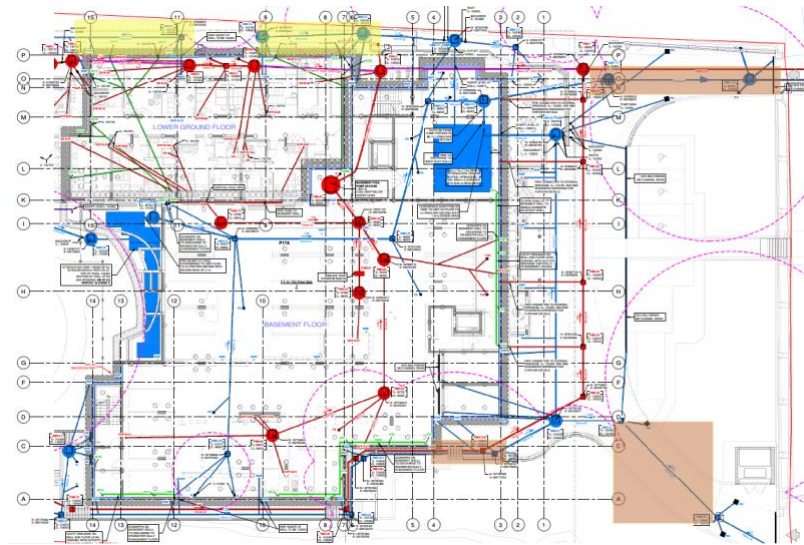


Image 11 - Areas requiring hand / air spade methodology to the east of the site highlighted yellow and areas within existing hard surfacing for mechanical excavation under arboricultural supervision highlighted orange.

10 LANDSCAPING ACTIVITIES

- 10.1 Prior to the commencement of landscaping works a meeting between the landscape contractor, arboricultural clerk of works and main contractor will be held.
- 10.2 This meeting will establish with the parties present the sequence of events, the purpose of tree protection, communication protocol and the level of inspection and supervision required. Clarification of the following will be required:
- General protection measures,
 - Removal of protective fencing,
 - Soil levels,
 - Use of machinery and tools; and
 - Tree planting in root protection.

Use of machinery and tools

- 10.3 No vehicles will be used within the designated RPAs during landscaping operations.
- 10.4 Hand tools will be used in these areas to ensure that no tree roots are damaged during the landscaping works.
- 10.5 On site induction with landscape ground workers will take place by the landscape contractor supervisor who will be responsible for ensuring that all site operatives are aware of this requirement.
- 10.6 All landscape operations will be in accordance with BS 5837 Trees in relation to design, demolition and construction Recommendations (2012) and BS 4428 (1989) Code of practice for general landscape operations.

Removal of tree protection measures

- 10.7 Prior to the commencement of landscaping operations, some sections of the protective fencing shall be removed by hand to allow controlled access for works.
- 10.8 No vehicles will be permitted within this protected area for the purposes of carrying out the landscape operations or for any other purpose.
- 10.9 All landscape operations within the protected area will be carried out by hand, using hand tools only, unless otherwise agreed with the Local Authority Arboricultural Officer beforehand.

- 10.10 No dumping of spoil or rubbish, parking of vehicles or plant, storage of materials or temporary accommodation will be undertaken within the protected area.
- 10.11 All tree roots within the protected area greater than 25mm diameter will be retained and worked around.

Planting of vegetation

- 10.12 Where tree or shrub planting is proposed within root protection areas the following methods will apply.
- 10.13 Planting tree pits will be excavated manually, any roots of existing trees greater than 25mm diameter encountered will be retained and if necessary, the tree pit will be moved to allow for their retention.
- 10.14 All roots greater than 25mm in diameter will be retained and will immediately be wrapped in damp hessian to prevent desiccation and temperature fluctuations.
- 10.15 Immediately after the new tree is planted, the pit will be backfilled in accordance with the landscape architect specification. Exposed roots must be recovered with soil within 2 hours of exposure

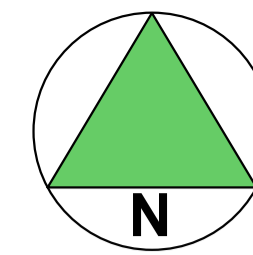
Soil levels

- 10.16 Soil levels will not be increased or reduced within the crown spread of trees by more than 50mm above or below existing soil levels.



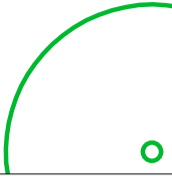
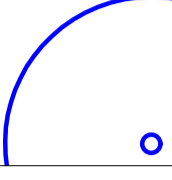
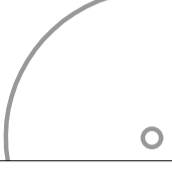
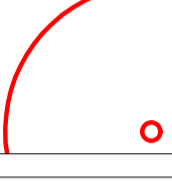


APPENDIX A - Plans

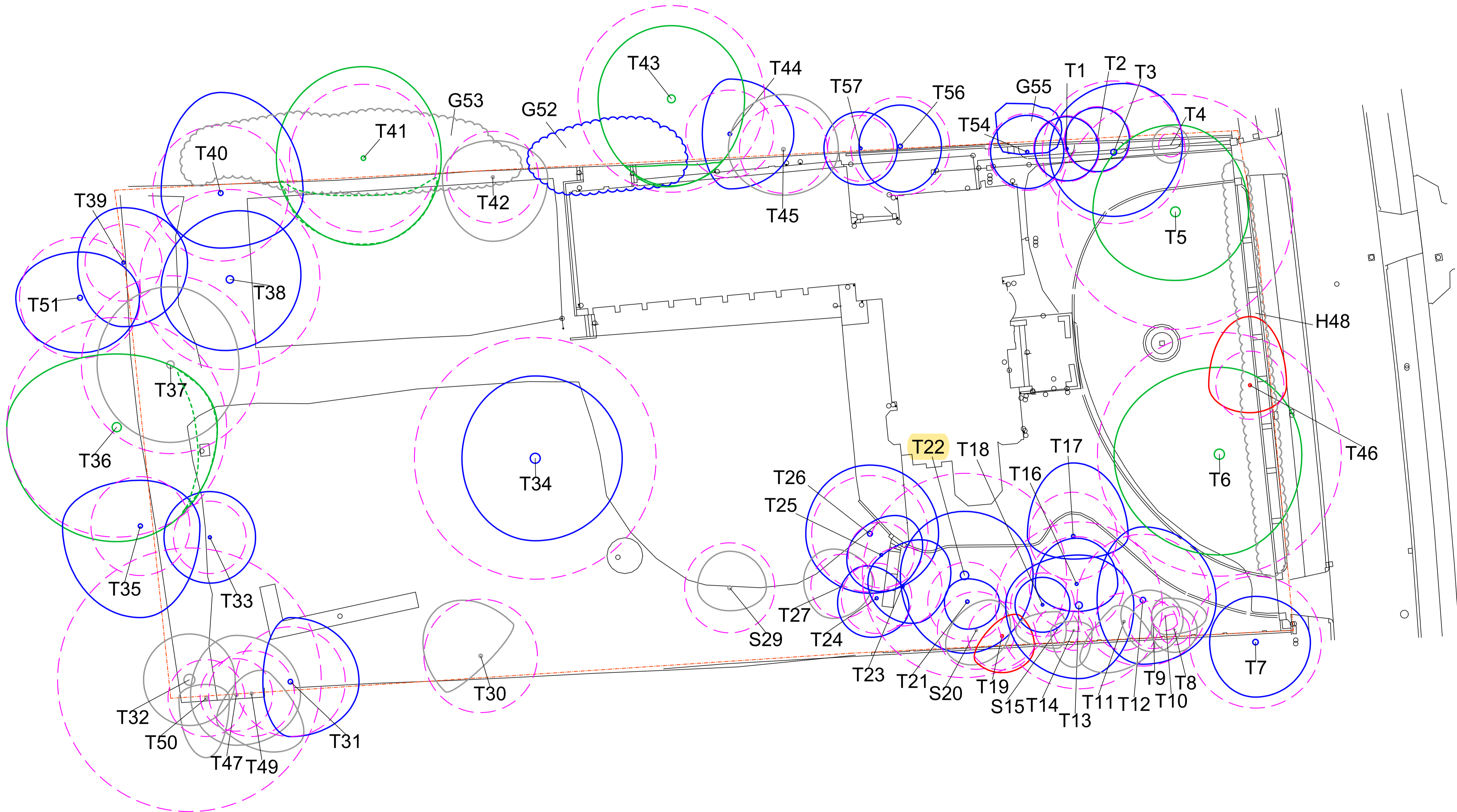
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- 190431-P-11b Proposed Tree Works
- 190431-P-12 Tree Protection Demolition
- 190431-P-14a Tree Protection Basement Construction
- 190431-P-13a Tree Protection Construction




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BS 5837:2012 TREE RETENTION CATEGORIES

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Trees of high quality with an estimated remaining life expectancy of at least 40 years.
-  **Category B**
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
-  **Category C**
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-  **Category U**
Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
-  **BS5837 Root Protection Areas**
Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.
-  **Site boundary**



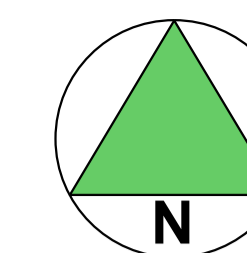
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REV	DATE	DESCRIPTION	DRAWN
Base Drawing			
-	12.12.19	3367 01B 2D Topographical and Underground Utility Survey	
			

Title		
Tree Survey		
Client		
Fed3 Projects Ltd		
Project		
58 The Bishops Avenue, London, N2 0BE		
Date	Drawn by	Checked by
December 2019	HR	-
Drawing No	Rev	Scale
190431-P-10	a	1:250@A1

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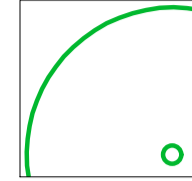
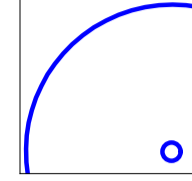
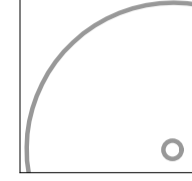
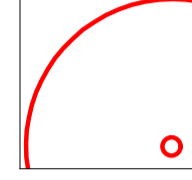

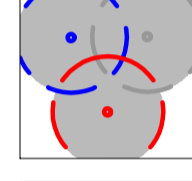




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BS 5837:2012 TREE RETENTION CATEGORIES

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-  **BS5837 Root Protection Areas**
Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.
-  Trees to be removed shown shaded grey
-  Trees to be pruned back shown shaded orange
-  Site boundary



b	28.04.20	AA8336-Sheet - 2008 - Proposed Ground Floor Plan	HR
a	31.01.20	AA8336 1052 Proposed Ground Floor Plan	XX
REV	DATE	DESCRIPTION	DRAWN
Base Drawing			
-	09.01.20	AA8336 1049 Proposed Site Plan	

Title
Proposed Layout and Tree Removals

Client
Fed3 Projects Ltd

Project
58 The Bishops Avenue, London, N2 0BE

Date	January 2020	Drawn by	HR	Checked by	-
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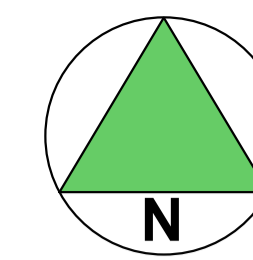
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Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

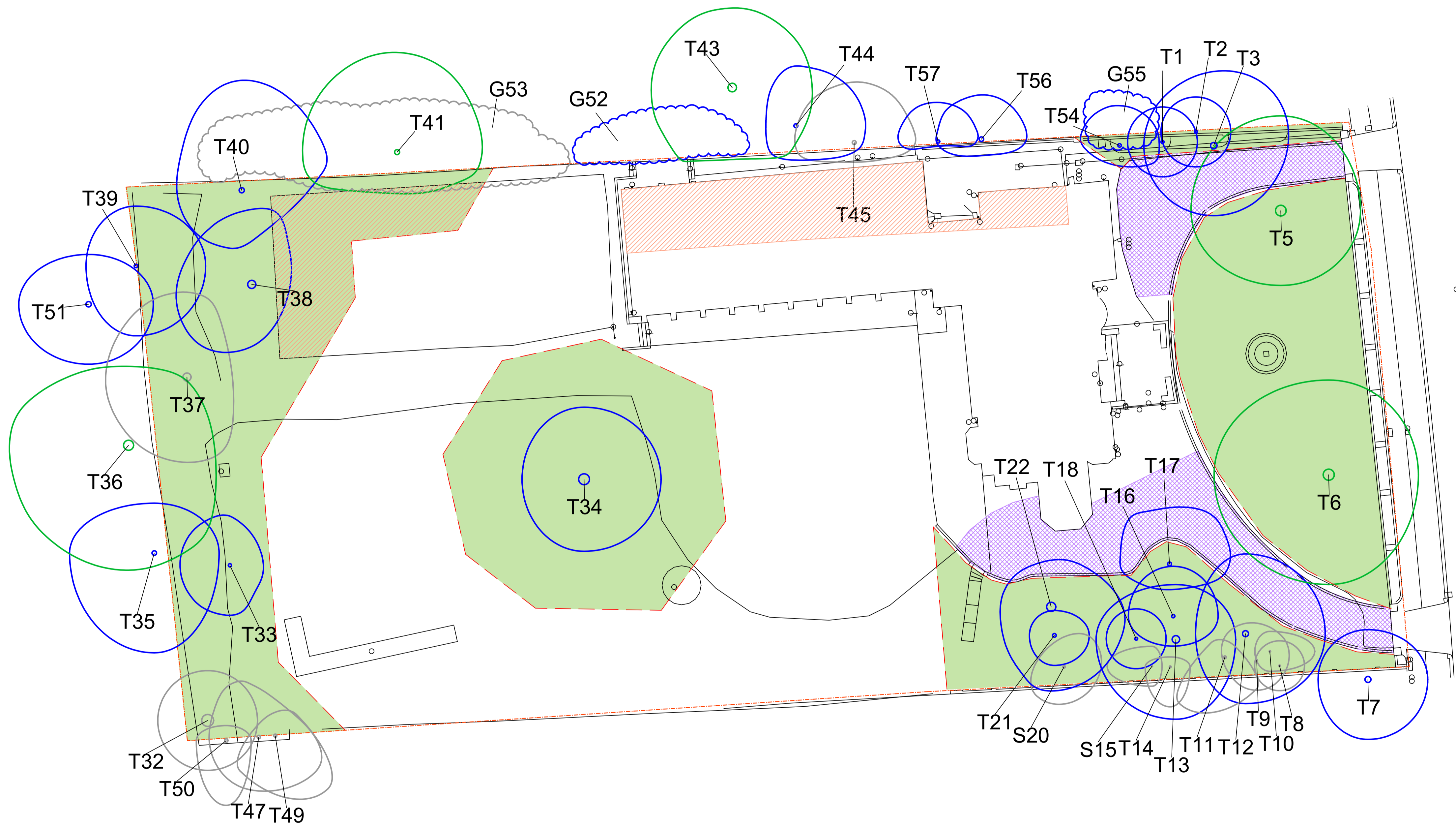
Category C
Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm.

Category U
Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Position of protective fencing and tree protection zones.

No changes to levels or surfacing.

Building to be demolished top down pull back from trees, no excavation beneath building footprints or surfacing sub-base.



REV	DATE	DESCRIPTION	xx
-	-	-	xx
-	31.01.20	3367.01B 2D Topographical and Underground Utility Survey	DRAWN

Base Drawing

0 1m 5m 10m 15m 20m 25m

Title
Tree Protection for Demolition

Client
Fed3 Projects Ltd

Project
58 The Bishops Avenue, London, N2 0BE

Date
January 2020

Drawn by
HR

Checked by
-

Drawing No
190431-P-12

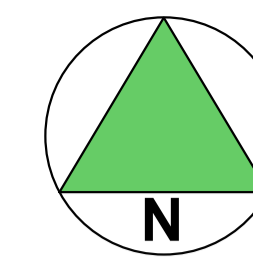
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Scale
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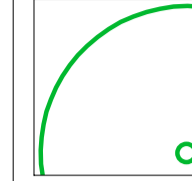
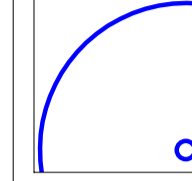
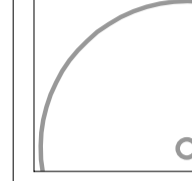
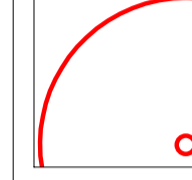
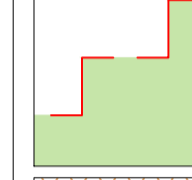
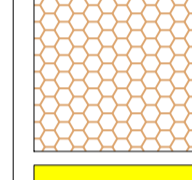
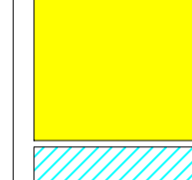
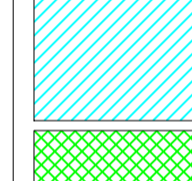
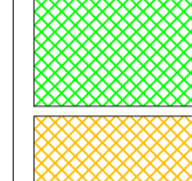



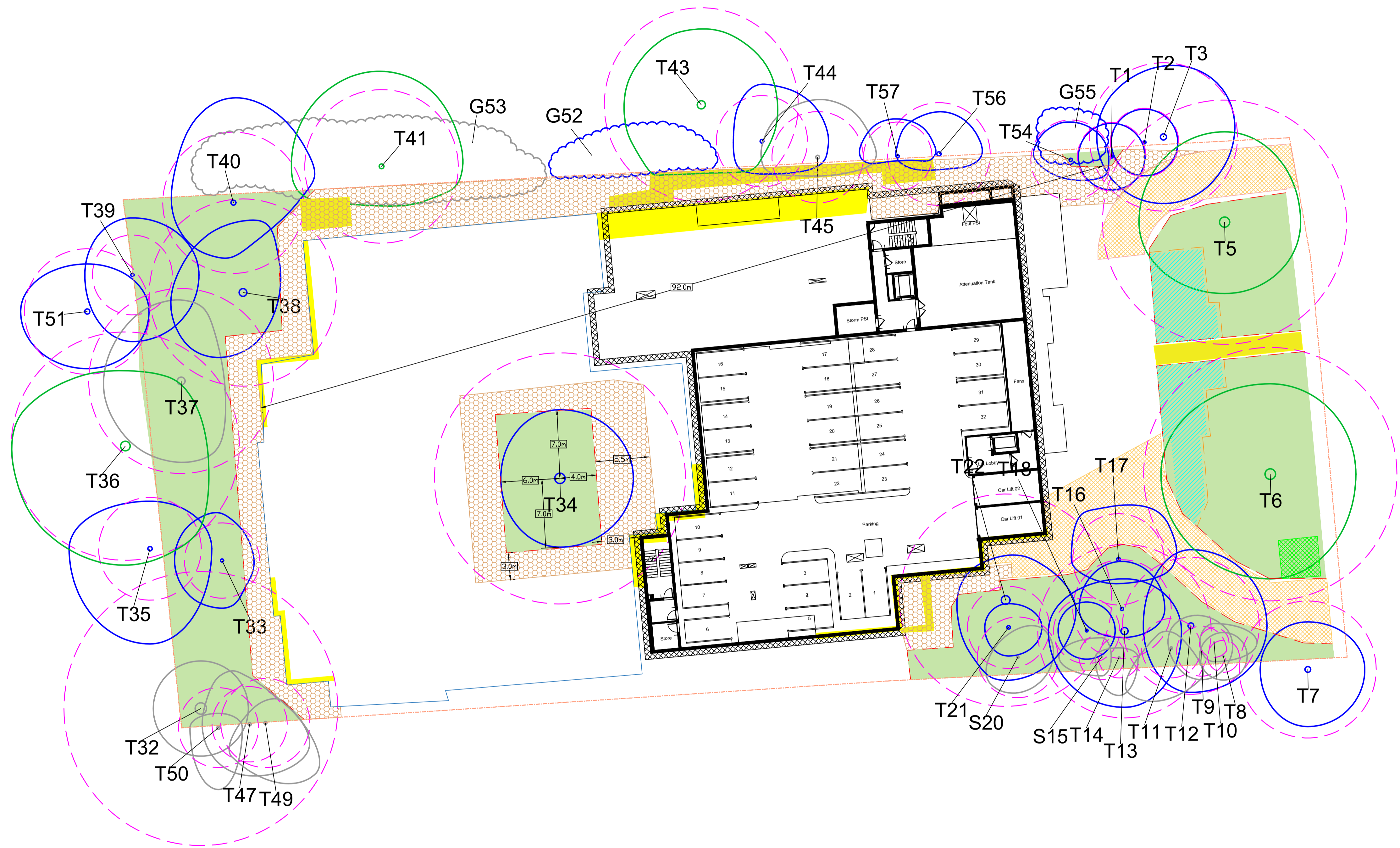
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-  Position of protective fencing and tree protection zones.
-  Ground protection during construction.
-  Excavations under arboricultural supervision
-  Cellular confinement system parking, levels retained or minor excavations install.
-  Substation installation under arboricultural supervision.
-  Levels and surfacing depths retained.



a	21.04.20	AA8336 2006 - Proposed Basement	HR
REV	DATE	DESCRIPTION	DRAWN
Base Drawing			
-	31.01.20	AA8336 1082 Proposed Ground Floor Plan	



Title
Tree Protection for Construction - Basement

Client
Fed3 Projects Ltd

Project
58 The Bishops Avenue, London, N2 0BE

Date	January 2020	Drawn by	HR	Checked by	-
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Drawing No	190431-P-13.01	Rev	a	Scale	1:250@A1
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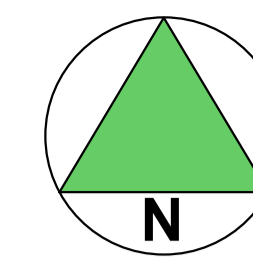
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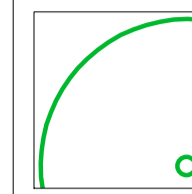
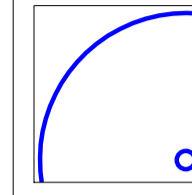
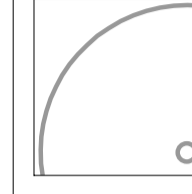
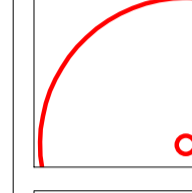
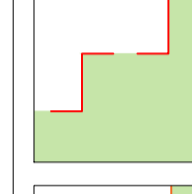

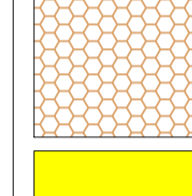
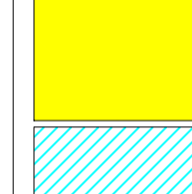
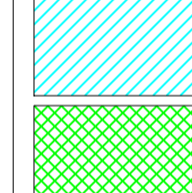
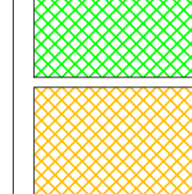
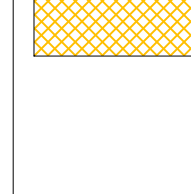
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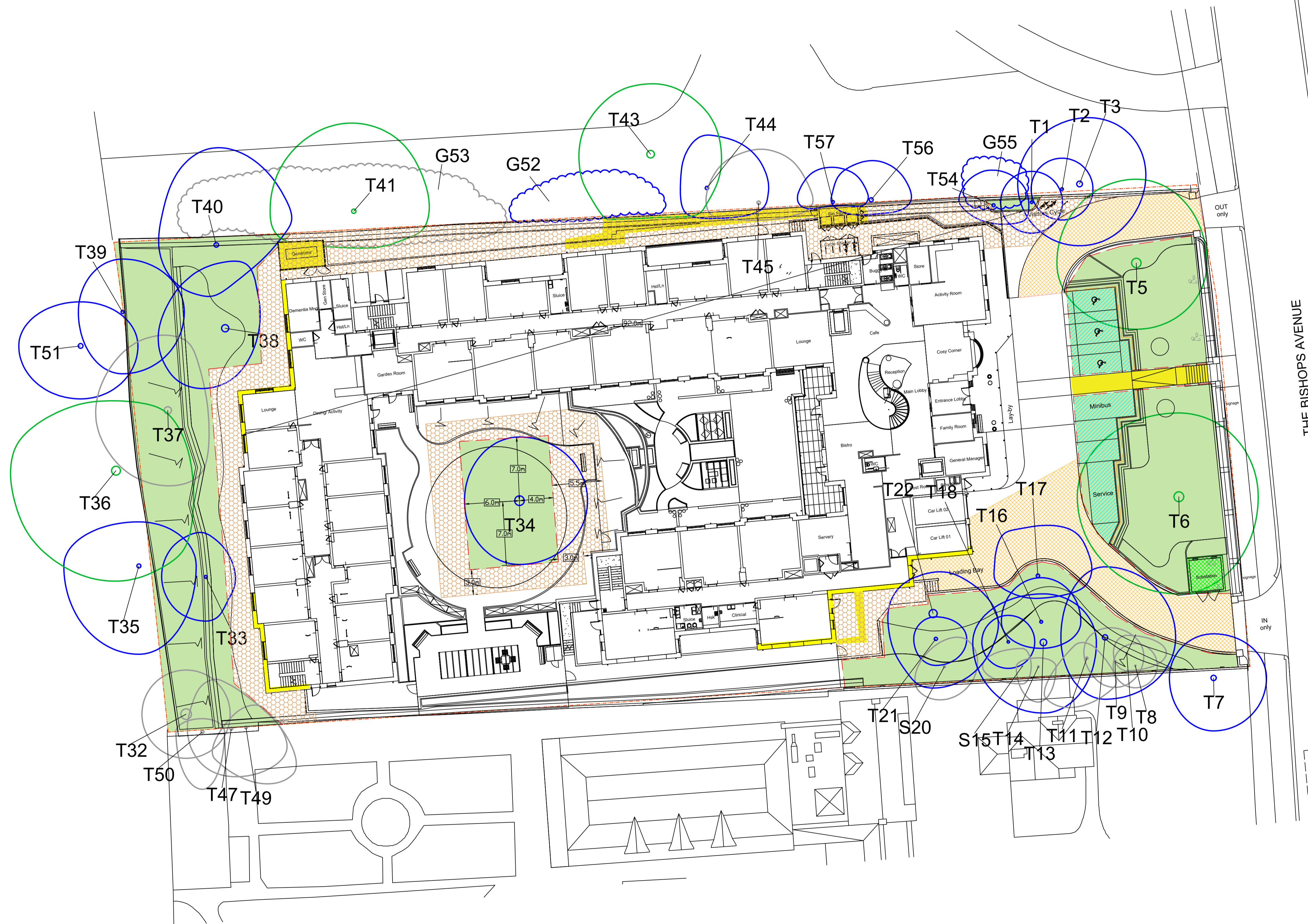
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-  Position of protective fencing and tree protection zones.
-  Fencing position following installation of parking.
-  Ground protection during construction.
-  Excavations under arboricultural supervision.
-  Cellular confinement system parking, levels retained or minor excavations to install under arboricultural supervision.
-  Substation installation under arboricultural supervision.
-  Levels and surfacing depths retained.



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REV	DATE	DESCRIPTION	DRAWN
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Base Drawing			
0 1m 5m 10m 15m 20m 25m			

Title
Tree Protection for Construction

Client
Fed3 Projects Ltd

Project
58 The Bishops Avenue, London, N2 0BE

Date	January 2020	Drawn by	HR	Checked by	-
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Drawing No	190431-P-13	Rev	a	Scale	1:250@A1
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APPENDIX B - Schedules

- 190431-PD-12 Tree Work Schedule
- 190431-PD-10a Tree Schedule

190431-PD-12 - Planning Tree Works Schedule

58 The Bishops Avenue London N2 0BE



ID	No. / Species	BS5837 Category	Purpose of works Recommended works	Status
T3	1 <i>Carpinus betulus</i> Hornbeam	B1/B2	To facilitate development Reduce crown by - Specified extent. South west aspect 1.5m	Proposed
T4	1 <i>Thuja sp.</i> Thuja sp.	C2	To allow access Fell - Ground level.	Proposed
T17	1 <i>Betula pendula</i> Silver Birch	B1/B2	To manage nuisance Reduce crown by - Specified extent. Northern aspect by 1m.	Proposed
T19	1 <i>Crataegus laevigata</i> Midland Hawthorn	U	Landscape improvement Fell - Ground level.	Proposed
T22	1 <i>Quercus robur</i> English Oak	B1/B2	To manage nuisance Reduce crown by - Specified extent. North western aspect by 3m.	Proposed
T23	1 <i>Taxus baccata</i> Yew	B1/B2	To facilitate development Fell - Ground level.	Proposed
T24	1 <i>Taxus baccata</i> Yew	B1/B2	To facilitate development Fell - Ground level.	Proposed
T25	1 <i>Laurocerasus officinalis</i> Cherry Laurel	B2	To facilitate development Fell - Ground level.	Proposed
T26	1 <i>Fagus sylvatica</i> Common Beech	B2	To facilitate development Fell - Ground level.	Proposed
T27	1 <i>Laurocerasus officinalis</i> Cherry Laurel	C2	To facilitate development Fell - Ground level.	Proposed
S29	1 <i>Laurus nobilis</i> Bay/Bay Laurel/Poets Laurel	C2	To facilitate development Fell - Ground level.	Proposed
T30	1 <i>Acer pseudoplatanus</i> Sycamore	C1	Landscape improvement Fell - Ground level.	Proposed
T31	1 <i>Carpinus betulus</i> Hornbeam	B1/B2	To facilitate development Fell - Ground level.	Proposed
T33	1 <i>Pinus sp.</i> Pine sp.	B1	To manage nuisance Reduce crown by - Specified extent. Eastern aspect by 2m.	Proposed
T34	1 <i>Quercus robur</i> English Oak	B1	To manage nuisance Reduce crown by - Specified extent. South eastern aspect by 1.5m.	Proposed
T36	1 <i>Quercus robur</i> English Oak	A1/A2	To manage nuisance Reduce crown by - Specified extent. Eastern aspect by 1m.	Proposed
T37	1 <i>Quercus robur</i> English Oak	C1/C2	To manage nuisance Reduce crown by - Specified extent. Eastern aspect by 1.5m.	Proposed

ID	No. / Species	BS5837 Category	Purpose of works Recommended works	Status
T38	1 <i>Quercus robur</i> English Oak	B1/B2	To manage nuisance Reduce crown by - Specified extent. Eastern aspect by 2.5m.	Proposed
T40	1 <i>Carpinus betulus</i> Hornbeam	B1/B2	To manage nuisance Reduce crown by - Specified extent. Southern eastern aspect by 2m and crown lift to 3m.	Proposed
T41	1 <i>Carpinus betulus</i> Hornbeam	A1/A2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 3.5m from furthest branch tip south.	Proposed
T42	1 <i>Acer pseudoplatanus</i> Sycamore	C1/C2	To facilitate development Fell - Ground level.	Proposed
T43	1 <i>Quercus robur</i> English Oak	A1/A2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 1m.	Proposed
T44	1 <i>Quercus robur</i> English Oak	B1/B2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 2m.	Proposed
T45	1 <i>Fraxinus excelsior</i> Ash	C1/C2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 2m.	Proposed
T46	1 <i>Cerasus avium</i> Wild Cherry	U	Landscape improvement Fell - Ground level.	Proposed
T47	1 <i>Acer pseudoplatanus</i> Sycamore	C1/C2	To manage nuisance Reduce crown by - Specified extent. North eastern aspect by 2m.	Proposed
H48	1 <i>Acer platanoides</i> Norway Maple	C2	Landscape improvement Fell - Ground level.	Proposed
	1 <i>Carpinus betulus</i> Hornbeam			
	5 <i>Elaeagnus commutata</i> Silver Berry			
	25 <i>Hedera helix</i> Common Ivy			
	10 <i>Pyracantha coccinea</i> Pyracantha			
G52	10 <i>Laurocerasus officinalis</i> Cherry Laurel	B2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 1m.	Proposed
T54	1 <i>x Cupressocyparis leylandii</i> Leyland Cypress	B1/B2	To manage nuisance Reduce crown by - Specified extent. South west aspect by 1.5m	Proposed
T56	1 <i>Thuja plicata</i> Western Red Cedar	B1/B2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 2m	Proposed
T57	1 <i>Thuja plicata</i> Western Red Cedar	B1/B2	To manage nuisance Reduce crown by - Specified extent. Southern aspect by 1.5m, crown lift to 2.5m.	Proposed

Tree work analysis (trees and trees in groups)

	Landscape improvement	To allow access	To facilitate development	To manage nuisance
Fell - Ground level	4	1	8	0
Reduce crown by - Specified extent	0	0	1	17
Total	4	1	9	17

	Total
Fell - Ground level	13

	Total
Reduce crown by - Specified extent	18
Total	31

190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T1	1 Thuja plicata (Western Red Cedar)	15.0	30	1	3.5		3.5		3.5		3.5		0.5		Mature	Structural condition Fair. Physiological condition Good. Base / stems obscured - Vegetation. Competition - Adjacent trees. Position estimated - not on topographical survey.	04/12/2019	40.7	3.6	20-40	B1/B2
Tree T2	1 Thuja plicata (Western Red Cedar)	15.0	30	1	3.5		3.5		3.5		3.5		0.5		Mature	Structural condition Fair. Physiological condition Good. Base / stems obscured - Vegetation. Competition - Adjacent trees. Position estimated - not on topographical survey.	04/12/2019	40.7	3.6	20-40	B1/B2
Tree T3	1 Carpinus betulus (Hornbeam)	16.0	65	1		8.0		7.0		7.0		7.0	3.5		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Branch - Suspended. Competition - Adjacent trees. Deadwood - Major. Off-site tree.	04/12/2019	191.1	7.8	20-40	B1/B2
Tree T4	1 Thuja sp. (Thuja sp.)	4.5	11	1	2.0		2.0		2.0		2.0		3.0		Early Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent trees.	04/12/2019	5.5	1.3	10-20	C2
Tree T5	1 Quercus robur (English Oak)	18.0	107	1	9.5		8.0		7.5		9.0		2.5	5.5 W	Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Buttresses / buttress roots - Minor adaptive growth / moderate development. Deadwood - Minor. Epicormic growth - Bole / principal stems. Ivy or climbing plant.	04/12/2019	517.9	12.8	40+	A1/A2
Tree T6	1 Quercus robur (English Oak)	19.0	111	1	9.5		9.0		11.0		11.5		1.0	5 S	Mature	Structural condition Fair. Physiological condition Fair. Buttresses / buttress roots - Minor adaptive growth / moderate development. Deadwood - Minor. Epicormic growth - Bole / principal stems. Form - Spreading crown.	04/12/2019	557.4	13.3	40+	A1/A2

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T7	1 Quercus robur (English Oak)	15.0	60	1	5.0		6.0		6.0		5.0		8.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Base / stems obscured - Structure. Crown reduction - Recent. Off-site tree.	04/12/2019	162.9	7.2	20-40	B1/B2
Tree T8	1 Ilex aquifolium (Holly)	5.0	14	1	2.5		2.5		2.5		2.5		2.0		Early Mature	Structural condition Fair. Physiological condition Fair. Competition - Adjacent trees.	04/12/2019	8.9	1.7	10-20	C2
Tree T9	1 Ilex aquifolium (Holly)	7.0	21 COM	2		3.5		3.0		3.0		4.0	1.5		Early Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent trees. Multi-stemmed.	04/12/2019	21.8	2.6	10-20	C2
Tree T10	1 Betula pendula (Silver Birch)	6.0	13	1	2.0		4.5		2.0		1.5		5.0		Early Mature	Structural condition Fair. Physiological condition Fair. Competition - Adjacent trees. Epicormic growth - Base. Leaning trunk - Minor. Position estimated - not on topographical survey.	04/12/2019	7.6	1.6	10-20	C2
Tree T11	1 Betula pendula (Silver Birch)	7.5	26	1		1.5		4.5		6.5		2.0	3.0		Mature	Structural condition Fair. Physiological condition Fair. Competition - Adjacent trees. Leaning trunk - Minor. Suppressed crown - Major. Unbalanced crown - Major.	04/12/2019	30.6	3.1	10-20	C1/C2
Tree T12	1 Quercus robur (English Oak)	18.0	60	1	8.0		8.0		7.0		5.0		4.0	7 NW	Mature	Structural condition Fair. Physiological condition Fair. Buttresses / buttress roots - Minor adaptive growth / moderate development. Competition - Adjacent trees. Deadwood - Minor.	04/12/2019	162.9	7.2	20-40	B1/B2
Tree T13	1 Quercus robur (English Oak)	17.0	76	1	5.5		6.0		8.0		8.0		7.5	8 NW	Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Buttresses / buttress roots - Minor adaptive growth / moderate development. Competition - Adjacent trees. Deadwood - Minor. Storm damage.	04/12/2019	261.3	9.1	20-40	B1/B2

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category	
					N	NE	E	SE	S	SW	W	NW										
Tree T14	1 Taxus baccata (Yew)	6.0	18	1	1.0		2.0		4.0		2.5			2.5		Early Mature	Structural condition Fair. Physiological condition Fair. Bark exudation. Competition - Adjacent trees. Decline - Suspected. Decay / structural defect - Base.	04/12/2019	14.7	2.2	10-20	C2
Shrub S15	1 Ilex aquifolium (Holly)	4.0	20 COM	4	2.0		1.0		2.0		4.5			1.5		Early Mature	Structural condition Fair. Physiological condition Fair. Competition - Adjacent trees. Multi-stemmed.	04/12/2019	18.1	2.4	10-20	C2
Tree T16	1 Taxus baccata (Yew)	9.5	43 COM	2	5.0		4.5		3.0		4.5			3.0		Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Bark exudation. Competition - Adjacent trees. Deadwood - Minor. Decay / structural defect - Base. Decay / structural defect - Bole. Fork - Weak with included bark.	04/12/2019	84.4	5.2	20-40	B1/B2
Tree T17	1 Betula pendula (Silver Birch)	16.0	40	1	8.0		6.0		2.5		5.0		5 N	4.5		Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent trees. Unbalanced crown - Minor.	04/12/2019	72.4	4.8	20-40	B1/B2
Tree T18	1 Thuja plicata (Western Red Cedar)	12.0	29	1	3.0		3.0		3.0		3.0			2.5		Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent trees.	04/12/2019	38.0	3.5	20-40	B1/B2
Tree T19	1 Crataegus laevigata (Midland Hawthorn)	6.0	31	1		3.0		4.0		4.0		1.5		3.0		Mature	Structural condition Poor. Physiological condition Fair. Arboricultural work - Recent. Crack - Longitudinal / shear crack. Competition - Adjacent trees. Decay / structural defect - Major. Decay / structural defect - Bole. Epicormic growth - Bole / principal stems. Leaning trunk - Minor.	04/12/2019	43.5	3.7	0-10	U
Shrub S20	1 Laurocerasus officinalis (Cherry Laurel)	5.0	35 COM	2		4.0		3.5		4.0		2.5		0.0		Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Competition - Adjacent trees. Epicormic growth - Base.	04/12/2019	56.5	4.2	10-20	C2
Tree T21	1 Ilex aquifolium (Holly)	9.0	36	1	2.5		3.5		3.0		2.5			2.0		Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent trees. Leaning trunk - Minor.	04/12/2019	58.6	4.3	20-40	B2

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T22	1 Quercus robur (English Oak)	18.0	93	1	7.0	7.5	8.5	7.0			6.0	6 NE	Mature	Structural condition Fair. Physiological condition Fair. Buttresses / buttress roots - Major adaptive growth / strong development. Deadwood - Major. Epicormic growth - Bole / principal stems. Form - Spreading crown.	04/12/2019	391.3	11.2	20-40	B1/B2		
Tree T23	1 Taxus baccata (Yew)	9.5	36	1	6.0	4.5	3.5	4.0			3.5		Mature	Structural condition Fair. Physiological condition Good. Bark wound - Minor. Competition - Adjacent trees. Decay / structural defect - Bole. Epicormic growth - Base. Position estimated - not on topographical survey.	04/12/2019	58.6	4.3	40+	B1/B2		
Tree T24	1 Taxus baccata (Yew)	9.0	32	1	3.0	4.0	4.5	4.0			1.5		Mature	Structural condition Fair. Physiological condition Fair. Bark exudation. Competition - Adjacent trees. Decay / structural defect - Bole. Epicormic growth - Base. Position estimated - not on topographical survey.	04/12/2019	46.3	3.8	20-40	B1/B2		
Tree T25	1 Laurocerasus officinalis (Cherry Laurel)	10.0	30	1	5.0	4.0	4.0	3.5			3.0		Mature	Structural condition Fair. Physiological condition Good. Base / stems obscured - Vegetation. Competition - Adjacent trees. Epicormic growth - Base. Leaning trunk - Minor. Position estimated - not on topographical survey.	04/12/2019	40.7	3.6	20-40	B2		
Tree T26	1 Fagus sylvatica (Common Beech)	17.0	53	1	7.5	7.5	6.5	7.0			2.0	6 W	Mature	Structural condition Fair. Physiological condition Good. Base / stems obscured - Vegetation. Form - Spreading crown. Ivy or climbing plant. Position estimated - not on topographical survey.	04/12/2019	127.1	6.4	40+	B2		
Tree T27	1 Laurocerasus officinalis (Cherry Laurel)	7.0	29	1	3.5	3.0	4.0	4.5			0.0		Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Epicormic growth - Base. Leaning trunk - Minor. Position estimated - not on topographical survey.	04/12/2019	38.0	3.5	10-20	C2		

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Shrub S29	Laurus nobilis (Bay/Bay Laurel/Poets Laurel)	6.5	41	1	4.0		4.0		2.5		3.5		0.0		Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Base / stems obscured - Vegetation. Epicormic growth - Base. Position estimated - not on topographical survey.	04/12/2019	76.0	4.9	10-20	C2
Tree T30	1 Acer pseudoplatanus (Sycamore)	12.0	51 COM	2		5.0		1.0		5.5		7.0	5.0		Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Decay / structural defect in crown limb / limbs - Major. Decay / structural defect - Base. Decay / structural defect - Open cavity / cavities. Ivy or climbing plant. Leaning trunk - Minor. Multi-stemmed. Shedding limb / limbs - Major.	04/12/2019	120.7	6.2	10-20	C1
Tree T31	1 Carpinus betulus (Hornbeam)	15.0	50	1	7.0		7.5		6.0		3.0		2.5	4 N	Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Base / stems obscured - Vegetation. Epicormic growth - Base. Ivy or climbing plant. Leaning trunk - Minor.	04/12/2019	113.1	6.0	20-40	B1/B2
Tree T32	1 Populus nigra 'Italica' (Lomardy Poplar)	24.0	120	1	5.0		5.0		5.0		5.0		6.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Base / stems obscured - Vegetation. Decay / structural defect - Bole. Fork - Weak with included bark. Ivy or climbing plant.	04/12/2019	651.4	14.4	10-20	C1
Tree T33	1 Pinus sp. (Pine sp.)	15.0	33	1	5.0		5.0		5.0		5.0		1.5		Mature	Structural condition Good. Physiological condition Fair. No significant faults observed. Position estimated - not on topographical survey.	04/12/2019	49.3	4.0	20-40	B1
Tree T34	1 Quercus robur (English Oak)	16.0	110	1	9.0		9.5		9.0		8.0		4.0	5.5 S	Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Deadwood - Major. Epicormic growth - Bole / principal stems. Form - Spreading crown. Foreign object - Ingrown metal. Ivy or climbing plant.	04/12/2019	547.4	13.2	20-40	B1

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T35	1 Quercus rubra (Red Oak)	17.0	45	1	5.0	6.5	10.0	8.5				4.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Base / stems obscured - Structure. Competition - Adjacent trees. Leaning trunk - Minor. Off-site tree.	04/12/2019	91.6	5.4	20-40	B1/B2	
Tree T36	1 Quercus robur (English Oak)	20.0	100	1	8.0	11.0	12.5	12.0				2.0		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Form - Spreading crown. Off-site tree.	04/12/2019	452.4	12.0	40+	A1/A2	
Tree T37	1 Quercus robur (English Oak)	17.0	81	1	8.5	7.5	8.5	8.0				5.5	4 NE	Mature	Structural condition Fair. Physiological condition Poor. Base / stems obscured - Vegetation. Die-back - Upper crown. Decline - Evident / observed. Deadwood - Major. Decay / structural defect - Base. Decay / structural defect - Major. Decay / structural defect - Open cavity / cavities. Form - Spreading crown. Ivy or climbing plant.	04/12/2019	296.8	9.7	10-20	C1/C2	
Tree T38	1 Quercus robur (English Oak)	18.0	82	1	8.0	7.5	8.0	7.0				3.0		Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Deadwood - Minor. Form - Small sail area / crown extent. Ivy or climbing plant.	04/12/2019	304.2	9.8	20-40	B1/B2	
Tree T39	1 Carpinus betulus (Hornbeam)	17.0	35	1	6.0	7.0	7.0	5.0				3.5		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Base / stems obscured - Structure. Base / stems obscured - Vegetation. Ivy or climbing plant.	04/12/2019	55.4	4.2	20-40	B1/B2	
Tree T40	1 Carpinus betulus (Hornbeam)	17.0	61 COM	2	11.0	9.0	6.0	6.5				2.0		Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Competition - Adjacent trees. Ivy or climbing plant. Leaning trunk - Major. Multi-stemmed. Unbalanced crown - Major.	04/12/2019	173.1	7.4	20-40	B1/B2	

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T41	1 Carpinus betulus (Hornbeam)	17.0	67 COM	2	10.0		8.5		9.5		9.5		2.0		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Base / stems obscured - Vegetation. Form - Spreading crown. Off-site tree.	04/12/2019	204.7	8.1	40+	A1/A2
Tree T42	1 Acer pseudoplatanus (Sycamore)	14.0	41 COM	2	4.0		6.0		7.0		5.5		2.0		Mature	Structural condition Fair. Physiological condition Fair. Decay / structural defect - Base. Epicormic growth - Base. Fork - Weak with included bark. Stems - Co-dominant.	04/12/2019	78.8	5.0	10-20	C1/C2
Tree T43	1 Quercus robur (English Oak)	17.0	85	1	8.0		8.0		9.5		8.0		5.0	5 S	Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Off-site tree. Position estimated - not on topographical survey.	04/12/2019	326.9	10.2	40+	A1/A2
Tree T44	1 Quercus robur (English Oak)	13.0	40	1	6.0		7.0		6.0		3.0		5.0		Early Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Off-site tree.	04/12/2019	72.4	4.8	20-40	B1/B2
Tree T45	1 Fraxinus excelsior (Ash)	13.0	40	1	6.0		6.0		5.0		6.0		5.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Base / stems obscured - Structure. Base / stems obscured - Vegetation. Ivy or climbing plant. Off-site tree.	04/12/2019	72.4	4.8	10-20	C1/C2
Tree T46	1 Cerasus avium (Wild Cherry)	10.0	31	1	7.5		4.0		3.0		4.5		1.5		Early Mature	Structural condition Fair. Physiological condition Poor. Competition - Adjacent trees. Decline - Evident / observed. Suppressed crown - Minor. Unbalanced crown - Major.	04/12/2019	43.5	3.7	0-10	U
Tree T47	1 Acer pseudoplatanus (Sycamore)	15.0	33	1	6.5		7.0		5.5		5.0		3.0		Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Competition - Adjacent trees. Ivy or climbing plant.	04/12/2019	49.3	4.0	10-20	C1/C2

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

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190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Hedge H48	1 Acer platanoides (Norway Maple)	6.0	10 AVE									0.0		Early Mature	Structural condition Fair. Physiological condition Fair. Hedgerow - Neglected / overgrown. Natural regeneration. Numbers estimated. Position estimated - not on topographical survey.	04/12/2019			10-20	C2	
	1 Carpinus betulus (Hornbeam)																				
	5 Elaeagnus commutata (Silver Berry)																				
	10 Pyracantha coccinea (Pyracantha)																				
	25 Hedera helix (Common Ivy)																				
Tree T49	1 Acer pseudoplatanus (Sycamore)	15.0	39 COM	2	3.0	7.5	5.0	2.0			2.0		Early Mature	Structural condition Fair. Physiological condition Fair. Base / stems obscured - Vegetation. Competition - Adjacent trees. Ivy or climbing plant. Leaning trunk - Minor. Unbalanced crown - Major. Position estimated - not on topographical survey.	04/12/2019	69.0	4.7	10-20	C2		
Tree T50	1 Acer pseudoplatanus (Sycamore)	15.0	35	1	1.5	2.5	6.5	3.0			6.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Restricted / obscured. Base / stems obscured - Vegetation. Competition - Adjacent trees. Ivy or climbing plant.	04/12/2019	55.4	4.2	10-20	C1/C2		
Tree T51	1 Quercus robur (English Oak)	19.0	55	1	5.0	6.5	6.0	7.0			8.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Competition - Adjacent trees. Off-site tree. Position estimated - not on topographical survey.	04/12/2019	136.8	6.6	40+	B1/B2		

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

190431 - 58 The Bishops Avenue ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Group G52	10 Laurocerasus officinalis (Cherry Laurel)	6.0	30 AVE									3.0		Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent vegetation. Off-site group. Position estimated - not on topographical survey.	04/12/2019			20-40	B2	
Group G53	10 Laurocerasus officinalis (Cherry Laurel)	5.0	20 AVE									2.0		Mature	Structural condition Fair. Physiological condition Good. Competition - Adjacent vegetation. Off-site group. Position estimated - not on topographical survey.	04/12/2019			10-20	C2	
Tree T54	1 x Cupressocyparis leylandii (Leyland Cypress)	16.0	35	1	4.0	4.0	4.0	4.0				2.0		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Competition - Adjacent trees. Off-site tree.	04/12/2019	55.4	4.2	20-40	B1/B2	
Group G55	1 Ilex aquifolium (Holly) 5 x Cupressocyparis leylandii (Leyland Cypress)	16.0	30 AVE									2.0		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Competition - Adjacent trees. Off-site group. Position estimated - not on topographical survey.	04/12/2019			20-40	B2	
Tree T56	1 Thuja plicata (Western Red Cedar)	17.0	45	1	4.5	4.5	5.0	4.5				2.0		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Off-site tree. Position estimated - not on topographical survey.	04/12/2019	91.6	5.4	20-40	B1/B2	
Tree T57	1 Thuja plicata (Western Red Cedar)	16.0	30	1	4.0	4.0	4.0	4.0				2.0		Mature	Structural condition Fair. Physiological condition Good. Access to inspect base - Not possible. Off-site tree. Position estimated - not on topographical survey.	04/12/2019	40.7	3.6	20-40	B1/B2	

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Summary table with retention category

	Group	Hedgerow	Shrub	Tree	Total
A1/A2	0	0	0	5	5
B1	0	0	0	2	2
B1/B2	0	0	0	22	22
B2	2	0	0	3	5
C1	0	0	0	2	2
C1/C2	0	0	0	6	6
C2	1	1	3	7	12
U	0	0	0	2	2
Total	3	1	3	49	56

Summary table with life stage

	Group	Hedgerow	Shrub	Tree	Total
Early Mature	0	1	1	8	10
Mature	3	0	2	41	46
Total	3	1	3	49	56

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see note)				
Category U 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	<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 * Trees infected with pathogens of significance to health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7</p>			RED
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Tree 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).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	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.	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.	Trees with material conservation or other cultural value.	BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	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.	Trees with no material conservation or other cultural value.	GREY



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