

Arboricultural Impact Assessment



**Tyler
Grange**

**Former Mary Feilding Care Home,
103-107 North Hill, Highgate
12th December 2022**

TG Report No. 13786_R02e_JP_NC

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Summary

- S.1. This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Limited (TG) on behalf of Highgate Care Ltd to accompany a full planning application at the former Mary Feilding care home, for the demolition of all of the existing buildings and the redevelopment to provide a new nursing and convalescence home of 70 beds and integral support facilities, together with a well-being and physiotherapy centre.
- S.2. This report provides details of a tree survey and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.
- S.3. None of the trees on the site are protected by a Tree Preservation Order (TPO). The site is located within the Highgate Conservation Area. One Horse chestnut tree (T18) located offsite within Wetherley Court was found to be protected by a TPO but this tree will not be affected by the development.
- S.4. Seven trees are proposed to be removed as part of the planning application. This includes two trees proposed to be removed due to their poor condition and not as a consequence of the proposed.
- S.5. Sections of the existing hard surfacing will be removed in a sensitive manner when within Root Protection Areas (RPAs). The newly exposed areas will be protected with tree protection fencing or ground protection boarding throughout the construction of this site.
- S.6. Sections of the proposed basement will be constructed within the RPAs of adjacent London plane trees shown as group G2.
- S.7. The proposed footpath within the garden areas will be constructed above the existing soil level to minimise the disturbance of the rooting environment. This includes the use of a suspended walkway to the north of the proposed building.
- S.8. This report is a revision (B) following Tree Officer Comments made on the 16th February 2022 and an updated tree survey that included trees growing within 109 North Hill, North Hill Highway and Wetherley Court. The document has been revised where appropriate.
- S.9. This report has been revised (D) on the 22nd of March to account of comments and action points from a meeting between the client, author and London Borough of Harringay Tree Officer on the 9th March 2022. This report and appended plans have been revised to show the existing basement in relation to the proposed development.
- S.10. This report assesses the impact of the proposed development from an arboricultural perspective with initial recommendations for the protection of the retained trees during the construction phase of the proposed development. Should planning consent be granted, further work is recommended to include the preparation of a full Arboricultural Method Statement (AMS) alongside full construction details. This work can be secured by a suitably worded planning condition.



Section 1: Introduction

Purpose

- 1.1. This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Ltd on behalf of Highgate Care Ltd to accompany a planning application at the former Mary Feilding Feilding Guild Care Home, North Hill, Highgate, hereafter referred to as the site.
- 1.2. The proposed consists of the demolition of existing buildings and redevelopment to provide a new care home (Class C2 - Residential Institution), together with a well-being and physiotherapy centre. The proposed care home includes up to 70 bedrooms, a hydrotherapy pool, steam room, sauna, gym, treatment/medical rooms, hairdressing and beauty salon, restaurant, cafe, lounge, bar, well-being shop, general shop, car and cycle parking, refuse/recycling storage, mechanical and electrical plant, landscaping and associated works. The layout of the proposed development is shown on the Proposed Layout included at **Appendix 1** to the rear of this report.
- 1.3. This report:
 - Provides the findings of a field-based tree survey and the associated tree constraints towards new development; and
 - addresses the potential arboricultural impacts of the proposed development based on its indicative design in the context of local and national planning policy.
- 1.4. The application is to be submitted to the London Borough of Haringey (LBH). LBH's Local planning policy and national planning policy pertinent to trees and the new development is set-out at **Appendix 2**.
- 1.5. The tree survey and assessment has been guided by the recommendations set out within the British Standard 5837 (2012) 'Trees in relation to design, demolition and construction – recommendations' (hereafter 'BS5837') to accord with industry best practice.

Site Description

- 1.6. The site is centred on national grid reference TQ 27986 88192 and its boundary is demarcated by the red line as shown on the **Tree Protection Plan (13786/P05a)** located to the rear of this report (**See Plan 2**).
- 1.7. The site comprises of an existing care home building complex with mature formal gardens to the front and rear. Trees within the site are limited to landscape trees planted within the gardens. The majority of the trees found at the survey are growing off-site within linear groups. These groups consist of a line of lime trees along the western boundary within the garden of 3 View Road shown as G1. G2 which is a group of London plane trees growing just off-site within a narrow strip of council owned land to the north.



Section 2: Baseline Information

- 2.1 The tree survey was completed by a suitably qualified Arboricultural Surveyor of Tyler Grange on 18th March 2021 and 16th February 2022. The survey was completed in accordance with BS5837 and the methodology as detailed at **Appendix 3**. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.
- 2.2 The distribution of the trees surveyed is illustrated on the TCP (**See Plan 1**) together details of their constraints to new development in accordance with BS5837, including:
- Tree quality gradings¹;
 - Root Protection Areas (RPAs)²;
 - Tree canopy spreads³; and
 - Tree shading⁴.
- 2.3 Findings for each of the trees surveyed are detailed in the **Tree Survey Schedule (See Appendix 4)**. This provides a tabulated record of the trees surveyed, including; reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.

Tree Survey Summary

- 2.4 A total of 23 individual trees (trees T1 – T23) and 3 groups of trees (G1 – G3) were identified during the tree survey of the site and its immediate vicinity.
- 2.5 The tree cover comprises of formal planting within the landscaped gardens with mature birch and Norway maples planted within the front and apples and magnolias within the rear. The majority of the trees found within the survey are a row of lime trees growing in 3 View Road along the western boundary (shown as G1) and a line of London plane trees (G2), along the northern boundary within a narrow strip of council owned land. Both these groups are just outside the fence line and both have evidence that they are on a regular pruning regime.
- 2.6 The tree shown as T3 was found to have significant decay within the base of its main stem. The surveyor informed the site manager that this tree should be removed as soon as possible at the time of the survey. The author has been informed this tree has now been removed on safety grounds.

Tree Grading Summary

- 2.7 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (See **Appendix 4**) recommended by the BS5837. The grading system allows informed decisions to be made concerning the design and impact of the development in relation to the arboricultural value of the trees surveyed.

¹ The value of arboricultural features surveyed in accordance with the methodology set-out Appendix 3.

² A 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. See further explanation at Appendix 3.

³ Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.

⁴ Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.



2.8 The category gradings for each survey are detailed in the table below.

	Category U	Category A	Category B	Category C
Individual Trees	T3, T7, T12, T22	None	T1, T4, T8, T13, T14, T15, T16, T18, T19, T23	T2, T5, T6, T9, T10, T11, T17, T20, T21
Groups of Trees	None	G2	G1	G3, G4

Table 1. Category grading of arboricultural features

Tree-related Designations

2.9 Following a background check of available online mapping services on the 12th October 2021, the presence or absence of tree-related designations is detailed in the table below.

Designation Type	TG Tree Reference Number(s)
Tree Preservation Order⁵	T18 – TPO/2014/1600
Conservation Area⁶	Highgate Conservation Area (whole site)
Ancient Woodland⁷	None
Woodland Habitat⁸	None

Table 2. Tree-related Designations / Tree References Numbers

2.10 One Horse chestnut tree that is growing in a neighbouring site of Wetherley Court (101 North Hill) was found to be protected by a tree preservation order reference TPO/2014/1600.

⁵ A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁶ Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁷ Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for ancient woodland on or adjacent to a site.

⁸ Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for woodland on or adjacent to a site.



Section 3: Arboricultural Impact Assessment

- 3.1. This Arboricultural Impact Assessment has been undertaken to address the outline development proposals in relation to existing trees.
- 3.2. The assessment is informed by a composite overlay of the tree survey information and proposed Layout which is shown on the **Tree Protection Plan (Ref. 13786/P05a)** located to the rear of this report (**See Plan 2**).
- 3.3. For ease of reading the Tree Protection Plan has been separated to cover the demolition phase (sheet 1) and construction stages (sheet 2) of development.
- 3.4. One Horse chestnut tree that is growing in a neighbouring site of Wetherley Court was surveyed in February 2022. This tree was not plotted on the topographical survey, so its location has been plotted in relation to the existing building with the use of a laser measure. Separating the proposed and the tree is a 3m tall double skin boundary wall, that is to be retained. Foundations for such a wall will have likely limited the root growth within the site. Additionally, the existing basement of the current building will have prevented root growing to the north beyond the existing building outline. As can be seen from the appended protection plan the proposed is within the same footprint of the existing basement. Consideration has been given to the crown of the tree to the proposed, the proposed is in a very similar footprint as the existing and therefore will not form a greater pressure to prune than the existing relationship. It is recommended the outermost edge of this tree is pruned back to allow for construction room within the site. This work would be limited to the outer regrowth only and will not significantly affect the main structure of the tree. Overall, the proposed will have little to no impact on this tree.
- 3.5. Three highway trees within North Hill were picked up in the 2022 survey. One of the trees has been reduced to a 2.5m stump. The notional RPA of the northernmost tree is shown within the site but it's likely the 3m tall boundary wall will have restricted root growth within the site. The proposed layout has been considered, with the proposed building being built in a similar footprint. The existing site frontage is completely hard-surfaced with the proposed being the same. The proposals will have little to no impact on the three highway trees
- 3.6. Two trees were surveyed within the garden of 109 North Hill. Both trees are growing within shrub beds within the garden, which has a lower level of approximately 1m compared with the site. Along the southern boundary of the garden is a concrete retaining structure, which will have limited the root growth into the site. The canopy of the closest tree to the site (T19) overhangs the boundary line slightly. It is recommended this is pruned back to the boundary line (approximately 60cm) to allow for construction room. Overall, both trees within the garden of 109 will not be affected by the proposed.

Evaluation of impact of proposed tree losses

- 3.7. The extent of tree removal proposed is illustrated on the **TPP Demolition Phase (See Plan 2)** and is further detailed below.
- T5 – Cherry – Category C
 - T6 – Magnolia – Category C



- T7 – Apple – Category U
- T8 – Magnolia – Category B
- T11 – Holly – Category C
- T12 – Laurel – Category U

- 3.8. Tree T8 is a category B magnolia that is to be removed to allow for the building construction, as it is located within the building footprint. Given the comprehensive redevelopment proposed its retention is not feasible and attempting to incorporate the tree into the design would likely result in an awkward and inefficient building layout. Whilst it is acknowledged the tree has some value in the current context of the formal garden, it is not of a quality that should compromise the layout, and it is judged that a better result can be achieved in the holistic sense to remove and provide replacement trees as illustrated on the layout.
- 3.9. Further removals to accommodate the proposed building consist of three category C trees T5, T6 and T11 as well as category U tree T7. These trees are within the two lower categories and as such it is judged that they are not of a quality that should present any constraint to development.
- 3.10. In addition to the above trees, T12 was found to be in a diminished condition and their removal is recommended as good maintenance and should take place regardless of development.
- 3.11. Sycamore tree T3 was found to have significant decay within the lower stem and has been removed on grounds of health and safety following the survey. This was confirmed in February 2022.
- 3.12. Compensatory planting is shown within the proposed landscaping scheme prepared separately by Guarda Landscape. In total 8 proposed trees are shown on the illustrative Landscape masterplan. The proposed hard and soft landscaping plans is shown within the proposed site layout at **Appendix 1**.

Pruning works

- 3.13. Trees that require pruning to accommodate the proposed are detailed below. These trees will be pruned to give a suitable clearance to the proposed including construction working room. Except for G3, all the trees already have evidence of continual pruning maintenance. Trees within G1, G2 and T15 appear to be pruned on an established cyclical maintenance program of approximately every 3-5 years.

Tree Number	Species	Operation
G1	Lime	Crown reduction to 6 trees of up to 2.5m, leaving a crown radius to the east of 2m
G2	London Plane	Crown reduction to 3 trees within the group of up to 2.5m leaving a crown radius to the south of 2.5m
G3	Lawson Cypress	Crown reduction of up to 2m leaving a crown radius to the west of 1.5m
T15	Hornbeam	Crown reduction of 2m to the south and 1m to the west leaving a crown radius of 1.3m south and 2.5m west
T18	Horse chestnut	Crown reduction of 60cm to northwest side to crown taking the canopy back to the boundary line. Leaving a crown radius to the northwest of 5.3m



T19	Mimosa	Crown reduction of 60cm to the east side of the crown taking it back to the boundary line. Leaving a crown radius to the east of 3.8m
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Table 3. Tree pruning specifications



Photo 1: Indication of pruning location of offsite tree T19, with growth left of the red line being removed.

Demolition Works within Root Protection Areas

- 3.14. The **TPP Demolition Phase (See Plan 2)** shows the areas of sensitive demolition, this consists of the removal of the existing hard surfacing, sheds and footpaths within the RPAs of adjacent trees, G1, G2, T15 and G4. Some sections of the hard surface removal will be returned to soft landscaping including sections within G1 and G4.
- 3.15. Once the surface has been removed the area will be protected with tree protection fencing or ground protections see **TPP Construction phase (See Plan 2)**.



Proposed new surfacing development

- 3.16. Proposed construction, hard and soft landscaping is shown on the **TPP Construction Phase (See Plan 2)**.
- 3.17. As part of the formal landscaping, a perimeter footpath is proposed within the rear garden. Where this is shown within the RPAs of retained trees of G1 and G2, it will be constructed above the existing ground or sub-base level of the existing path to ensure minimal disturbance to the rooting environment.
- 3.18. Along the north of the proposed building is an area of raised boardwalk, this allows the interior floor levels to match in with the exterior without raising the ground levels within the RPAs of the adjacent trees. This will be a benefit to the trees overall as the existing hard surface will be removed and the new soft ground will be in a void under the walkway, leaving an area of uncompacted and unsurfaced soil, ideal for moisture and gaseous exchange to take place. The increase in the soft ground goes to help mitigate the loss of the rooting due to the building by improving the growing conditions closer to the trees.
- 3.19. A proposed parking bay is shown within the RPA of Birch tree T2 covering an area equivalent to 6% of the RPA. T2 is growing on top of a rockery at 1m higher than the area where the proposed parking is to be located. The raised level likely means there will be reduced rooting mass in the area of incursion. Therefore, the impact from the proposed will be minimal and no sensitive surface construction is proposed.

Proposed construction within RPAs

- 3.20. The proposed basement will extend further towards the trees within G1 and G2 than the existing building footprint. With regards to the London plane trees within G2, the maximum amount of incursion has been measured at 14%, with an average incursion of 10% of the notional RPAs. This species of tree is tolerant to excavations within its rooting environment and to ensure the minimum amount of damage takes place the outer edge of the basement footings will be excavated by hand for the first 70cm under the supervision of the project arboriculturist.
- 3.21. The proposed basement impact on the lime trees within G1 is substantially smaller than G2 with an average incursion into the RPAs of just 2.2%. This is a minor incursion and will not be detrimental to the trees physiological condition.
- 3.22. The design team have considered the site entrance off View Road in great detail so that the healthy trees (T1, T2 and T4) could be retained as they make a valuable contribution to the street scene. The team also had to consider how the access to the site would be adequate and meet modern standards of design. The proposed results in an increase in hard surfacing within the RPAs of the frontage trees. This has been measured for T1 as 12% of the currently unsurfaced ground or 2% of the RPA overall. T2 has 19% of the currently unsurfaced ground or 8% of the RPA overall. For tree T4, consideration has also been given to the levels within this area and the design has been set out to mimic or be shallower than the existing gradient of the driveway. Any excavation works within the RPAs of these trees will be conducted under arboricultural supervision.
- 3.23. Hornbeam T15, has an incursion into its RPA of 4.2% from the proposed building footprint, this is a small incursion and not likely to be a detriment to the tree physiological condition. It should be



noted that the majority of the proposed building is to be located 1.5m further away from the tree than the existing, giving an overall increasing the tree rooting area to the south.

- 3.24. The chestnut tree within Wetherley Court and the lime trees along North Hill have their notional RPAs shown on the appended plans but it should be noted the foundations of the 3m tall boundary wall will have limited the root growth into the site and the existing basement will have prevented roots from growing under the building. The proposed building including the basement is located within the same footprint or smaller than the existing one and will not be closer to the trees. These trees, therefore, will not be impacted by the proposed development.

Shade and future pressure to prune

- 3.25. The **TPP Construction Phase (See Plan 2)** illustrates where shade will be cast by the retained trees for the main part of the day across the proposed development.
- 3.26. The site layout has been assessed in terms of shading and future pressure to prune. Given the orientation of the site, and the relationship between the proposed buildings and the retained trees, the juxtaposition is viable for long-term tree retention, and it is considered that shading by trees is unlikely to be a concern to future residents.
- 3.27. With regards to pruning trees that are closest to the proposed, i.e. G1, G2 and T15, such trees are already pruned on a regular basis, therefore the proposed will not be a result an increase in the pruning of these trees.
- 3.28. The chestnut within Wetherley Court has been considered as it does cast shade over the proposed building. The proposed is of a similar location as the existing one and therefore will share a similar relationship. There should not be a significant increase in pressure to prune this tree from its existing situation. The tree is protected by a TPO and gives the Local Planning Authority ultimate control of any pruning works.

Proposed Planting

- 3.29. An Illustrative Landscape Masterplan has been prepared by Guarda Landscape Ltd will be submitted as part of this application. Approximately 8 new trees are shown planted within the proposed formal gardens including two trees along North Hill Road. The proposed hard and soft landscaping plans as shown within the proposed site layout at **Appendix 1**.

Construction Mitigation

- 3.30. With details of the design often not finalised until post submission, a detailed methodology for tree protection during the demolition and constructions stages is only outlined within the TPPs. It is therefore recommended that a full Arboricultural Method Statement (AMS) is prepared as part of a reserved matters application or to discharge applicable and suitably worded planning Conditions.
- 3.31. An AMS will set out a practical methodology to the protection of retained trees based on detailed designs, including groundworks, services and new landscaping. The AMS will typically include the following key items:
- A schedule and specification of tree removal and pruning works;



- Specifications for tree protection barriers and ground protection;
- Procedures for any specialist construction techniques / any supervised excavations within RPAs (if required)
- Phasing of work;
- Site monitoring (where required); and
- A Tree Protection Plan.

Conclusion

- 3.32. This report sets out the findings of a tree survey and provides a preliminary assessment of arboricultural impact to accompany the planning application.
- 3.33. All trees proposed to be removed are located with the existing rear garden. None of the trees proposed to be removed are of high arboricultural value and in line with local planning policy, all trees with special or high amenity value can be retained.
- 3.34. The proposed construction does have a small impact on the retained trees in the form of construction within the RPAs. Despite this impact, the trees can be successfully retained throughout the demolition and construction stages subject to the adoption of mitigation measures as recommended within this report.
- 3.35. The proposed boardwalk in lieu of hard surfacing will go to improve the rooting area within the RPA's of trees within G2 and T15.
- 3.36. Further work is recommended to include an Arboricultural Method Statement to discharge of suitably worded planning condition.
- 3.37. The trees within 109 North Hill, North Hill Highway and Wetherley Court will not be significantly impacted by the proposed development.



Appendix 1: Proposed Layout



Appendix 2: Planning Policy Context

- A2.1 Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Applicable arboricultural planning policy that relates to the site is set out below at a National and Local level.

National Planning Policy

- A2.2 The National Planning Policy Framework (NPPF) is a material consideration in planning decisions and outlines the Government's planning policies for England, setting out how these are expected to be applied. The consideration for existing trees and woodlands in the context of planning and new development is set out within Section 15 'Conservation and Enhancing the Natural Environment'.
- A2.3 Paragraph 170 provides a series of prerequisites to inform how planning policies and decisions should contribute to and enhance the natural and local environment. This includes "*protecting and enhancing valued landscapes*" and "*recognising the intrinsic character and beauty of the countryside*". The value of ecosystem services is also noted, including the "*economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*".
- A2.4 Paragraph 170 also recognises the consideration for "*minimising impacts on and providing net gains for biodiversity*". This includes the need to establish cohesive ecological networks that are "*more resilient to current and future pressures*".
- A2.5 Paragraph 171 addresses the need to take a "*strategic approach to maintaining and enhancing networks of habitats and green infrastructure*" adding that plans should be made for the "*enhancement of natural capital at the catchment or landscape scale across local authority boundaries*".
- A2.6 Paragraph 174 includes ways in which biodiversity should be protected and enhanced, such as plans that "*identify, map and safeguard components of local wildlife-rich habitats*", as well as "*wildlife corridors and stepping stones that connect them*".
- A2.7 Paragraph 175 highlights a series of principles that local planning authorities should apply when determining planning applications, stating that "*if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused*".
- A2.8 Paragraph 175 also adds that "*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 compensatory strategy exists*".
- A2.9 At a national level, the consideration for trees is recognised in the context of their contribution green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character to a place. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'.



Local Planning Policy

A2.10 Local planning policy relating to trees and new development is set out at Policy OS2 of London Borough of Haringey Highgate neighbourhood plan (2017) as set out below.

Policy OS2: Protection of Trees and Mature Vegetation

- I. *Within the conservation areas or when protected by a TPO, specimen, veteran and mature trees and mature vegetation, which have townscape, ecological or amenity value should be retained where possible. If such loss is shown to be absolutely necessary, new development will be expected to submit proposals for suitable replacements, like for like replacement being supported where appropriate and feasible.*
- II. *Developments will be expected to preserve or enhance the character of Highgate's conservation areas, and the setting of the major open spaces. This should include, where necessary, the provision of new or replacement planting. There should be no net loss of trees of as a result of development, and pro rata replacement will be expected. The development should not harm the local network of ecological corridors and stepping stones, unless the need for, and benefits of, the development in that location clearly outweigh the loss.*
- III. *Within the conservation areas or when protected by a TPO, if a mature tree is found to be diseased and requires works significantly reducing its ecological or amenity value, appropriate replacement planting will be sought as close to the original site of the tree as possible. Veteran trees should be retained where possible.*

Note Policy OS2 seeks to build on the importance placed on the retention and protection of mature trees by national and local strategies and policies, including those published by Haringey and Camden. Too often, developers submit reports which conclude that ancient or mature trees at the site are diseased, and either need complete removal or such extensive works that their ecological and amenity value is substantially diminished. Haringey's "Validation Checklist" sets out the requirement for an arboricultural impact assessment to be submitted where tree works are involved.



Appendix 3: Methodology, Constraints Mapping and Limitations

Field Work

- A3.1. In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).
- A3.2. Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.
- A3.3. The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

- A3.4. Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A3.5. The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land topography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

A3.6.

Crown Spread and Height of Crown Clearance

- A3.6. Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.



- A3.7. The measured canopy shapes have been plotted on the **Tree Constraints Plan** at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.
- A3.8. The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.

Age Class

- A3.9. The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows 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.

Physiological and Structural Condition

- A3.10. The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

- A3.11. An assessment of a tree's physiological condition is defined as:

Good – fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair – fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor – a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead – tree observed to fully dead with no living parts.

- A3.12. An assessment of a tree's structural condition is defined as:

Good – no significant structural defects.



Fair – structural defects which could be alleviated through remedial tree surgery or arboricultural management practices

Poor – structural defects which cannot be alleviated through tree surgery or arboricultural management practices.

Tree Quality Gradings

A3.13. The value of trees have been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See **Appendix 4**). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values respectively.

Root Protection Areas

A3.14. The **Tree Constraints Plan** shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.

A3.15. Plotted RPAs serve as a 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.

A3.16. Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);

b) topography and drainage;

c) the soil type and structure;

d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

A3.17. The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading



- A3.18. The distribution of tree canopy cover on and within influence of the site is illustrated on the **TCP**. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at **Appendix 5** to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.
- A3.19. The principal tree shadow constraints are shown on the **TCP** and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.
- A3.20. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

- A3.21. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.
- A3.22. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

- A3.23. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- A3.24. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.



A3.25. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.



Appendix 4: BS 5837:2012 Cascade Chart for Tree Quality Assessment



TREES FOR REMOVAL				
Category and Definition	Criteria			Identification on Plan
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	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 (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).			DARK RED
	Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.			
	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. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	Criteria - Subcategories			Identification on Plan
	1. Mainly Arboricultural Values	2. Mainly Landscape Values	3. Mainly Cultural Values, including Conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	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)	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)	LIGHT 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 remedial defects, including unsympathetic past management	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	Trees with material conservation or other cultural benefits.	MID BLUE



	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	contribution to the wider locality		
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	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 temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY



Appendix 5: Tree Survey Schedule



Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T1	Norway maple	10m	370	4.25	4.50	4.00	4.50	3.00	Mature	Fair	Fair	B2	highway tree, historically reduced now regrown. Pruning wounds from fairly recent crown lifting	4.4	62
T2	Silver birch	13m	260	3.00	3.00	1.50	4.00	2.50	Mature	Good	Poor	C1	Growing atop of bank of boulders, visible signs of surface roots along wall. kink in lower stem	3.1	31
T3	Sycamore	11m	330	5.00	3.00	4.00	2.00	4.00	Mature	Poor	Poor	U	Significant decay pocket at base. Recommend tree to be removed within 3 months	4.0	49
T4	Sycamore	12m	400	3.50	3.00	5.00	5.00	3.00	Mature	Good	Fair	B2	Crown brake at 2m forming 3 main uprights. visible within the street seen	4.8	72
T5	Cherry	3.5m	136	4.50	4.00	3.00	4.00	1.00	Early mature	Good	Fair	C2	Three stems from below 1.5m wide spreading ornamental crown	1.6	8
T6	magnolia	4m	90	2.00	2.00	2.00	2.00	1.00	Early mature	Good	Good	C2	Establishing ornamental tree	1.1	4
T7	Apple	8m	450	5.00	6.00	5.00	5.00	2.00	Mature	Good	Fair	U	Fungi brackets consistent with Ganoderma at base on e and south sides and also on stem at 1m n side. this indicates decay is prevalent within lower stem. cavity in main stem at 2m	5.4	92
T8	magnolia	11m	260	3.00	4.00	2.00	3.50	2.00	Mature	Good	Good	B2	Occluded pruning wounds on stem, growing in close proximity to building	3.1	31
T9*	Hawthorn	5m	260	1.50	3.00	3.00	3.00	2.00	Mature	Fair	Fair	C2	Plotted by eye on plan, growing out of rubbish heap, one sided crown	3.1	31
T10	legustrum spp	6m	210	0.50	1.00	2.00	2.00	1.00	Early mature	Good	Fair	C2	One sided crown suppressed by adjacent	2.5	20
T11	Variegated Holly	11m	360	2.00	3.50	2.00	3.50	2.00	Mature	Poor	Fair	C2	Sparse canopy	4.3	59
T12*	Laural	5m	260	3.00	1.00	1.00	1.00	1.00	Mature	Fair	Poor	U	Smothered by ivy, very distorted crown	3.1	31

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T13*	Norway maple	13m	380	3.00	3.00	3.00	3.00	3.00	Mature	Good	Fair	B2	Plotted by eye on plan, growing in line with g2 and gas been regally pollarded	4.6	65
T14	London plane	13m	750	4.00	4.00	4.00	4.00	3.00	Mature	Good	Fair	B2	Part of linia group along northern boundry. regually pollarded tree	9.0	254
T15	Hornbeam	15m	440	3.50	3.50	3.50	3.50	4.00	Mature	Good	Fair	B2	Regularly reduced tree with an upright branch architecture, growing close to building	5.3	88
T16	Norway maple	11m	270	3.00	2.00	3.00	3.00	2.00	Early mature	Good	Fair	B2	Growing within ornamental planter	3.2	33
T17*	Portuguese Laurel	6m	200	3.00	3.00	3.00	3.00	2.50	Early mature	Good	Good	C2	Growing off site and plotted by eye on plan	2.4	18
G1*	Lime	13m	480	4.00	4.00	4.00	4.00	3.00	Mature	Good	Fair	B2	Off site group of limes growing abutting boundary fence, not plotted on topo. all trees have been historically pollard at 5m and regrown with multiple leaders. Several of the trees have ivy in there crowns which has recently been cut. dimensions are estimated avrage, setm diamiter is estermated maxamum	5.8	104
G2*	London plane	13m	700	5.00	5.00	5.00	5.00	6.00	Mature	Good	Fair	A2	Line of plane trees growing abutting boundary fence. trees have been regularly pollarded and form a strong feature along the northern boundary. Plotted by eye on plan, dims are estimated average. warrant a higher collective group rating	8.4	222
G3*	Lawson cypress	14m	280	4.00	4.00	4.00	4.00	3.00	Mature	Good	Poor	C2	Growing off site behind 6ft wall and plotted by eye on plan. historically topped, canopy in contact with building	3.4	35
G4*	Bay tree	8m	160	4.00	4.00	4.00	4.00	2.00	Early mature	Good	Fair	C2	Area of approximately 18 stems growing around old stump, some abutting the fence. plotted by eye on plan	1.9	12

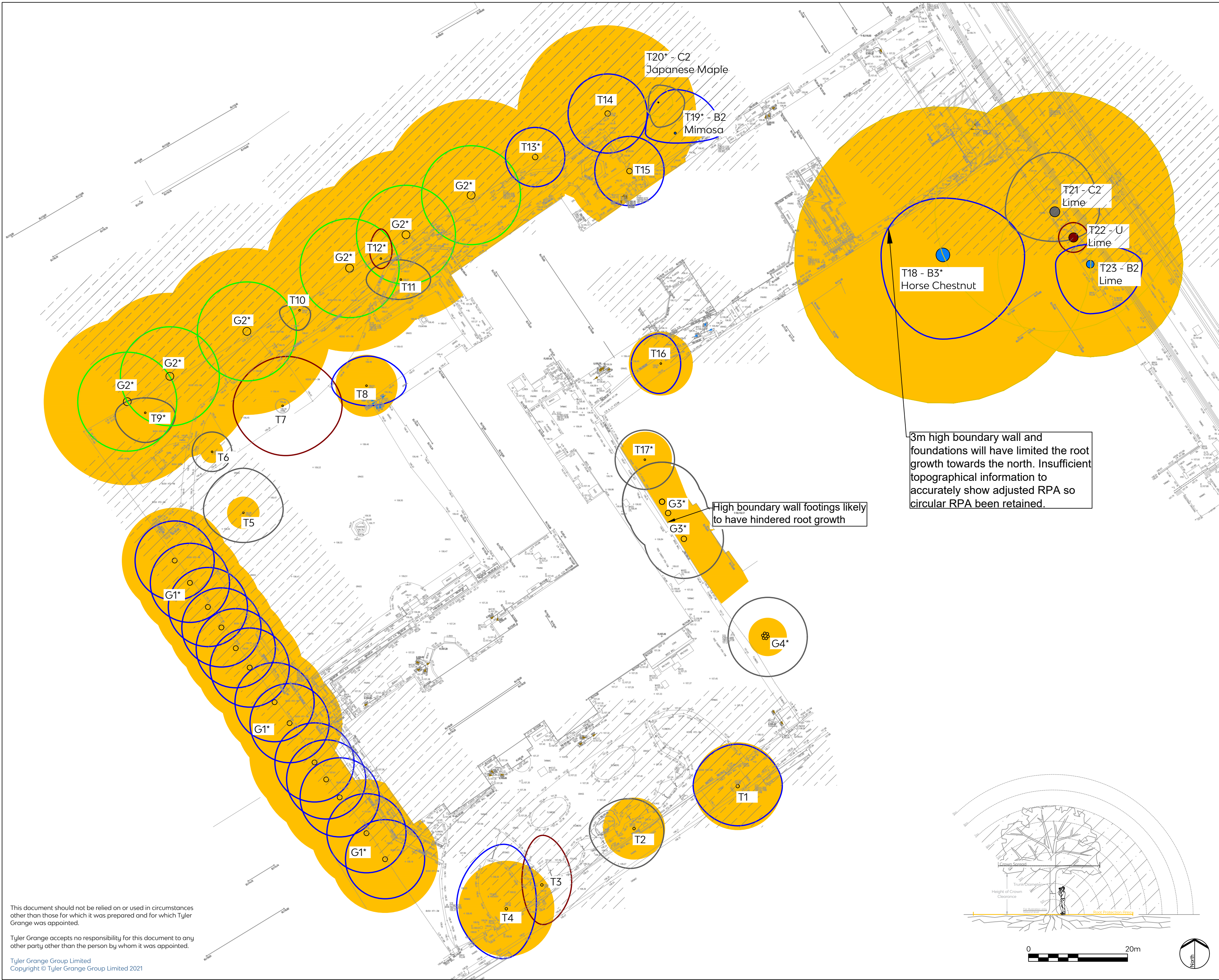
Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T18	Horse Chestnut	19m	1390(1)	5.75	8.25	8.50	6.25	9.00	Mature	Fair	Fair	B3	Large old pruning wounds on main stem with decay pocket forming. Tree historically pollarded at approximately 10m which forms its crown brake with multiple upright leaders. Tree has been further reduced with 1.5-2m regrowth present. Regrowth about 90cm from existing building, main branch structure 3m from building	15.0	707
T19	Mimosa	8m	220(1)	4.40	4.60	1.00	3.00	2.50	Mature	Good	Fair	B2	Growing within garden flower bed. Tree has evidence of successive pruning. Tight fork at main Crown brake trifurcates	2.6	22
T20	Japanese Maple	3m	70,40,60,65(4)	1.75	2.65	2.50	1.00	1.00	Early Mature	Good	Fair	C2	Trippel stemmed from 0.5m. Links decay strips visible from historic pruning wounds on stems	1.4	7
T21	Lime	19m	1010(1)	6.00	4.50	3.00	5.00	4.00	Mature	Fair	Poor	C2	Growing partly in a raised planter, stem bifurcates at 1.8m with Northam stem containing a significant decay pocket that appears to be over 60% of the stem dia. Tree looks to be on a regular pollarding schedule	12.1	462
T22	Lime	19m	940(1)	1.50	1.50	1.50	1.50	4.00	Mature	Poor	Poor	U	multiple fungi at base from two different app. Been reduced in height to 2.5m	11.3	400
T23	Lime	19m	780(1)	2.00	5.25	5.00	3.50	4.00	Mature	Fair	Poor	B2	Growing partly in a raised planter, Tree looks to be on a regular pollarding schedule	9.4	275

Plans

Plan 1: Tree Constraints Plan (TCP) (13786/P04a)

Plan 2: Tree Protection Plan (13786/P05a)



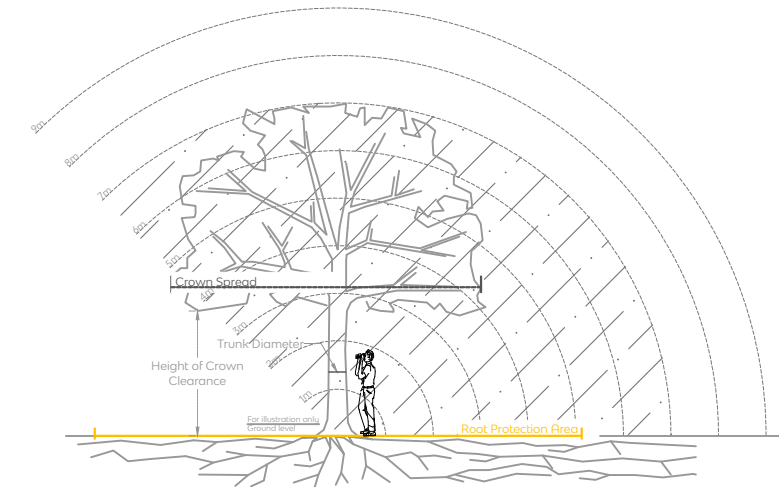


- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Root Protection Areas
- Tree Shading Constraints

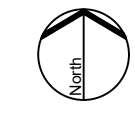
*Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.

3m high boundary wall and foundations will have limited the root growth towards the north. Insufficient topographical information to accurately show adjusted RPA so circular RPA been retained.

High boundary wall footings likely to have hindered root growth



0 20m



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A Rev	Updated Survey Data Description	17/02/2022 Date
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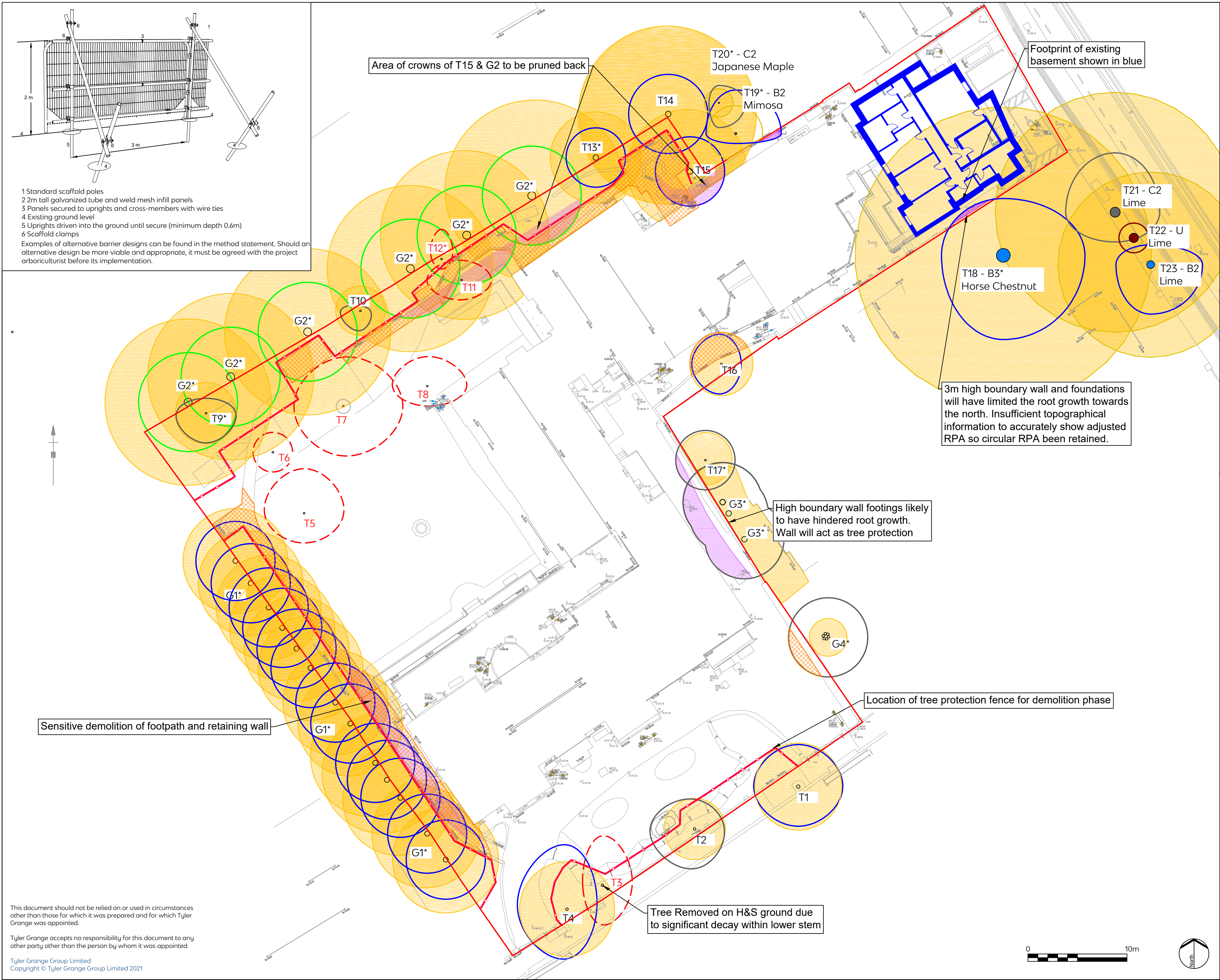
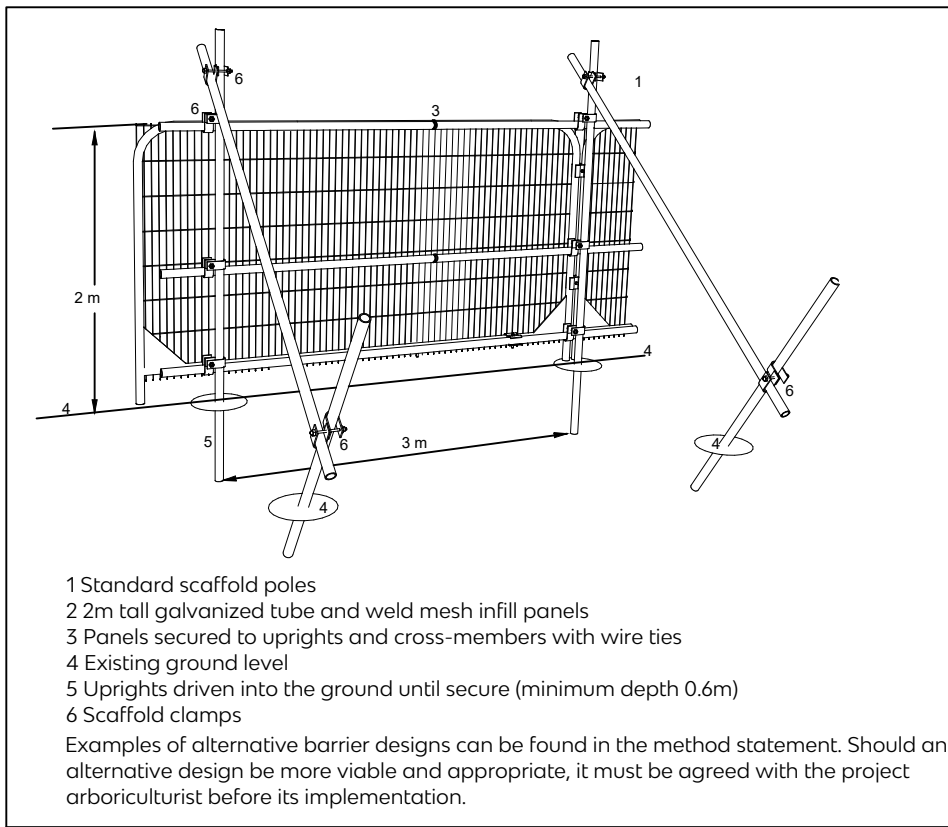
Project title
Mary Feilding Guild Care Home
103-107 North Hill, Highgate

Drawing title
Tree Constraints Plan

Scale Date	1:250 @ A2 16.03.2021	Drawn Checked	RA JP
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Drawing number
13786 P04

Revision
-



- Category A - Trees of High Quality and Value
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Root Protection Areas
- Tree Protection Barrier Demolition Locations
- Sensitive demolition within RPAs
- Proposed Tree Removals
- Proposed Tree Pruning Works

B	Existing basement footprint added	22/03/2022
A	Updated tree data	17/02/2022
Rev	Description	Date

 **Tyler Grange**

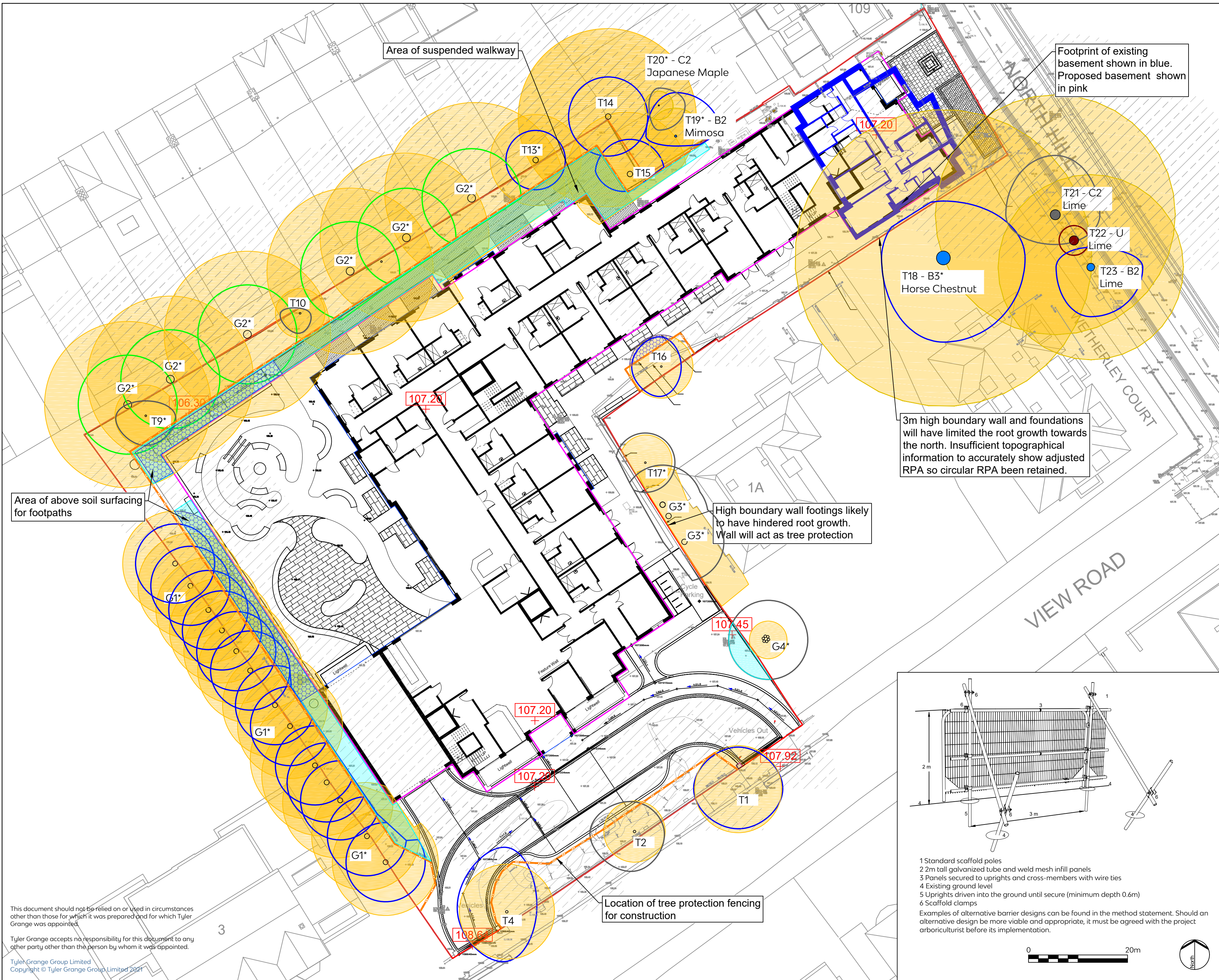
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Project title
Mary Feilding Guild Care Home, 103-107
North Hill, Highgate

Drawing title
Tree Protection Plan (Demolition)

Scale Date 1:250 @ A2 12.20.2021 Drawn Checked RA JP

Drawing number 13786_P05 1 of 2 Revision A



- Category A - Trees of High Quality and Value
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Root Protection Areas
- Tree Shading Constraints
- Tree Protection Barrier Construction Locations
- Ground Protection
- Above-soil surfacing within RPAs
- Proposed raised boardwalk
- Basement footprint
- Proposed layout

B	Existing basement footprint added	22/03/2022
A	Revised tree data	17/02/2022
Rev	Description	Date

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Project title
Mary Feilding Guild Care Home, 103-107 North Hill, Highgate

Drawing title
Tree Protection Plan (Construction)

Scale	1:500 @ A2	Drawn	RA
Date	12.20.2021	Checked	JP
Drawing number	13786_P05 2 of 2	Revision	A



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