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PARTNERSHIP



MINET INFANT AND JUNIOR SCHOOL
HAYES
ARBORICULTURAL IMPACT ASSESSMENT
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Executive Summary

1. This report accompanies a planning application for the proposed demolition of one existing building, the extension of 2 existing buildings, resurfacing of hard standing, installation of drainage and soft landscaping at Minet Infant and Junior School in Hayes. It also includes the temporary siting of an accommodation block to the west of the site for the duration of the works. and the extension of 2 existing buildings at Minet Infant and Junior School in Hayes. It also includes the temporary siting of an accommodation block to the west of the site for the duration of the works. It details the arboricultural impact of construction works associated with redeveloping the school as a whole, inclusive of temporary accommodation, and the subsequent mitigation recommendations and protective measures., subsequent mitigation measures and required protection measures.
2. Based on an objective assessment made in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, there are 7 Category A, 26 Category B and 24 Category C and 1 Category U trees and groups on or within influencing distance of the site. 5 hedges were also recorded.
3. A site survey and desktop searches identified no trees subject to Tree Preservation Order; no trees within a Conservation Area; no veteran trees and no ancient woodland.
4. An assessment of the bat roost potential of trees on site has been carried out by a qualified ecologist which found 3 individual trees with low bat potential and a large area of adjacent off-site trees with moderate potential. The full results and recommendations of the assessment can be found in the Ecological Assessment (document reference: 8568.001).
5. The development will be completed over five phases: one pre-construction phase and four construction phases. All tree removal and pruning works will be completed as part of the pre-construction phase.
6. 9 trees (recorded as 1 individual tree and trees within 4 groups) and 5 linear metres of hedge would be removed to facilitate the development proposals. 1 tree and 1 tree group would require pruning to accommodate the temporary accommodation block and a proposed fence within the refurbished infant entrance area. It will be possible to retain all other trees throughout the construction in accordance with BS5837:2012.
7. 1 individual tree is unsuitable for retention within the context of the site due to infection with 2 principal decay fungi. It should therefore be removed irrespective of any development proposals on grounds of safety. The tree should be replaced, but this is part of routine site management and maintenance and should not be required in association with the development.
8. Several areas will require special construction methodology in order to retain the adjacent trees within the proposed development. Special construction methodology and tree protection measures to be observed during construction should be detailed in the form of an Arboricultural Method Statement prior to commencement of work in those areas.

9. A scheme of new planting is proposed, including four extra heavy standard whitebeam trees. The development would result in a small net loss of tree cover and the associated amenity and arboreal biodiversity, although this would be relatively minor due to the size and age of trees proposed for removal.
10. This report constitutes a valid basis for the evaluation of impacts on trees resulting from the proposed development for a period not exceeding 2 years. After this, it may be necessary to review survey data and conclusions to ensure reliability. Where the recommendations of this report have been followed, any future deterioration in tree condition may not be attributed to the development.

1.0 Introduction

- 1.1 TEP has been commissioned by Morgan Sindall to conduct an arboricultural survey of land at Minet Infant and Junior School in Hayes, London Borough of Hillingdon. This report details the arboricultural impact of redeveloping the school as a whole, inclusive of temporary accommodation, and the subsequent mitigation recommendations and protective measures.
- 1.2 The survey was carried out in December 2020 by means of inspection from ground level by a qualified Arboricultural Consultant. Trees were assessed in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- 1.3 Under the British Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.
- 1.4 A topographical survey was used to record the position of trees and vegetation (drawing reference: 36566T-08-01A). Where the age distribution and species mix of tree cover was relatively uniform, trees were plotted as groups. For the purposes of this report it is assumed that the detail on the drawing is accurate. A number of trees were not shown on the topographical surveys and their locations are estimated¹.
- 1.5 The nature of the soils on site was not assessed during the survey. The possibility of minor soil movement due to tree root activity cannot be discounted. Prior to the undertaking of foundation depth calculations any estimated tree locations should be resolved.
- 1.6 34 individual trees (T1-T34); 24 groups of trees (G1-G24) and 5 hedges (H1-H5) were surveyed and mapped². All arboricultural information recorded during the survey is presented at Appendix A.
- 1.7 This report provides the results of the survey and includes the following:
 - A schedule of all trees located on, or within influencing distance of the proposed development site (Appendix A);
 - An assessment based on BS 5837:2012, of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: A, B, C or U (Appendices A & B);
 - An assessment, based on BS 5837:2012, of the requirement for protection of trees during the construction phase (Section 6);
 - Advice on removal, retention and management of trees (Sections 5 & 7);
 - A Tree Constraints Plan detailing tree quality categories, canopy spreads and Root Protection Areas (RPA) for all trees surveyed (Drawing 1);
 - A Tree Works Plan detailing the temporary and permanent development proposals alongside trees to be retained and removed (Drawing 2);

¹ Estimated feature locations are marked on Drawing 1

² See Drawing 1: Tree Constraints Plan

- An Arboricultural Method Statement Heads of Terms Plan detailing areas of special construction methodology within the temporary and permanent development proposals (Drawing 3); and
- An Approximate Construction Phases Plan detailing the approximate boundaries of construction phasing referred to in the Construction Programme and Arboricultural Method Statement (Drawing 4).

2.0 The Site and Surroundings

- 2.1 The site is located to the north of Avondale Drive, west of Abbotswood Way, south of Hughes Road and east of Hitherbroom Road. It comprises the existing school grounds which includes 2 playing fields and existing buildings and hardstanding. It covers an area of approximately 3.3ha and is centred on grid reference TQ105803.



Figure 1 Site location and approximate boundary (OS Street View @ 1:10 000 scale)

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- 2.2 The survey area is primarily flat with grass and hardstanding areas and weather conditions during the survey were overcast, but dry.
- 2.3 Inspection of trees was restricted in some cases by lack of access, dense vegetation or boundary fences and walls. These trees were surveyed insofar as was possible from accessible areas of the site and from the public highway³.

Development Proposals

- 2.4 The proposed development includes the demolition of one existing building, the extension of 2 existing buildings, resurfacing of hard standing, installation of drainage and soft landscaping. It also includes the temporary siting of an accommodation block to the west of the site for the duration of the works.
- 2.5 Detail of the proposals are shown on Drawings 2 and 3 and are based on the General Arrangement Plan (ref: MIN-UBU-XX-GF-DR-L-0005, Rev P03) and the General Arrangement with Temporary School - Portakabin Ultima Option Plan (ref: MIN-UBU-04-GF-DR-L-1024, Rev C03).
- 2.6 The development will be completed over five phases: one pre-construction phase and four construction phases. The approximate boundaries of each construction phase are shown on Drawing 4. The four construction phases are as follows:

Phase 1 - Site Establishment and Temporary Accommodation

³ Survey restrictions are noted in Appendix A

Phase 2 - Infant School Refurbishment and New Build

Phase 3 (including Phase 3A) - Junior School Refurbishment and Kitchen Upgrade

Phase 4 - Removal of Temporary Accommodation and Landscaping

3.0 Statutory Protection and Guidance

National Planning Policy Framework (NPPF)

- 3.1 The NPPF assumes protection of all ancient woodland and veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree that because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value.
- 3.2 On this site there are no ancient woodland or veteran trees.

Tree Preservation Orders & Conservation Area Designations

- 3.3 Where it is considered expedient to do so, local authorities can create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in force, lopping, topping, felling, uprooting or wilful damage caused to a tree is prohibited and such actions may be prosecuted and incur an unlimited fine. Works to TPO protected trees must only be undertaken with the written consent of the local authority.
- 3.4 Section 211 of The Town and Country Planning Act 1990 (TCPA) relates to the preservation of trees in Conservation Areas. Under Section 211 anyone proposing to remove, uproot or destroy any tree within a Conservation Area is required to give the local planning authority six weeks' prior notice (a "section 211 notice"). During this period the Council may consider serving a Tree Preservation Order to prevent the proposed work from being undertaken.
- 3.5 Exceptions from the requirement to give a Section 211 notice are set out in The Town and Country Planning (Tree Preservation) (England) Regulations 2012. A person does not have to give the local planning authority six weeks' prior notice for, amongst other reasons, work to trees so far as such work is necessary to implement a planning permission (other than an outline planning permission).
- 3.6 A check with the London Borough of Hillingdon was undertaken on 5th January 2022. The online mapping system confirmed that no trees within or immediately adjacent to the site are protected by Tree Preservation Order or within a Conservation Area.

Protected Species – Bats

- 3.7 Mature trees often contain cavities, crevices and hollows, which are a potential habitat for roosting bats. Bats are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010, and as such causing damage to a bat roost constitutes an offence.
- 3.8 An assessment of the bat roost potential of trees on site has been carried out by a qualified ecologist which found 3 individual trees with low bat potential (T5, T6 and T7) and a large area of adjacent off-site trees with moderate potential (G7 and G8). The full results and recommendations of the assessment can be found in the Ecological Assessment (document reference: 8568.001).

- 3.9 If the presence of a bat roost is suspected whilst undertaking works on any trees on site, operations must be halted until a licensed bat handler or ecologist can provide advice.

Protected Species - Birds

- 3.10 Trees are a potential habitat for nesting birds, which (as well as their nests and eggs) are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly, damage or destroy an active nest or any part thereof.
- 3.11 Due to the suitability of the trees within the survey boundary for nesting birds, all tree work should ideally be undertaken outside the bird nesting season (March to August, inclusive).
- 3.12 If this is not possible then a detailed inspection of each tree should be undertaken by a qualified ecologist immediately prior to the arboricultural works. Should an active nest be found (being built, containing eggs or chicks), any work likely to affect the nest must be halted until the nest becomes inactive.

4.0 Tree Population

- 4.1 34 individual trees (T1-T34); 24 groups of trees (G1-G24) and 5 hedges (H1-H5) were recorded within influencing distance of the site. A schedule of all trees and groups in terms of species, condition, age, management recommendations and BS 5837:2012 quality categories is provided at Appendix A.
- 4.2 Trees are a significant feature within the appearance and character of the site, with the majority located along the boundaries and a small number of individuals situated within the hardstanding areas of the playgrounds. The majority of trees are middle age in fair or good condition. Trees also line the entire northern boundary but are rooted on outside the curtilage of the school.
- 4.3 One of the most prominent trees on site is a mature English oak (T29), which is located on the southern site boundary adjacent to Avondale Drive. It is bifurcate at 2.5m and has been crown lifted on all sides of the canopy. It is the largest tree on site, standing at 15m in height and with a stem diameter at 1.5m of 820mm. This tree has good form and its size, in comparison to trees in the surrounding area, makes it significant in the landscape and contributes to this tree's significant amenity value.



Figure 2 Mature English oak tree (T29) situated on the southern site boundary.

- 4.4 To the west of tree T29 is a grass area comprising mixed broadleaved species including cherry plum, red oak and whitebeam. The most significant trees in this area are 2 Norway maples and a red oak (G17) located to the west. These trees are middle-aged and multi-stemmed but in good overall condition with canopies that have grown as a single feature. The red oak to the south of this group has cobra bracing between the eastern and western stems.

- 4.5 To the west of the site, a playing field contains several individual trees (T5 to T12) along its western boundary. These individuals are broadleaved species in fair to good condition and include beech, whitebeam and false acacia. There is also a small group of Leyland cypress (G4) and a sporadic, shrubby and overgrown group of holly and elder with occasional small self-set trees (G5). Trees T11 and T12 are 2 whitebeam that have been pruned and reduced in height, with the canopy of T12 being particularly heavily pruned to the north and west. Due to their height and location, the larger individual trees are prominent in the locality and stand out against the residential dwellings to the west.



Figure 3 Beech (T8) and hornbeam (T9) trees on western site boundary.

- 4.6 The largest continuous area of tree cover is located to the north of the site. The majority of the trees in this area are off-site and comprise various broadleaved species including sycamore, crack willow, ash, holly and hawthorn (G7 and G8). These trees provide screening of the school to the neighbouring residential properties and public footpath and provide habitats for wildlife.
- 4.7 Within the site, on the northern boundary, are 4 good quality individual specimen trees comprising 3 middle age red oaks (T13, T15 and T16) and 1 mature tree of heaven (T17). These trees are range 11m and 13m in height and between 530mm and 720mm in diameter at 1.5m. They are all in good condition with good vigour and have been crown lifted over the school grounds. The size and condition of these trees makes them significant in comparison to the adjacent trees. They also add to the screening effect provided by group G7 and G8.



Figure 4 Mature tree of heaven (T17) on northern boundary of site.

- 4.8 To the north of the site is within the aforementioned grouping is a middle age red oak (T14) that has 2 large brackets of the decay fungi *Ganoderma resinaceum* on the south-west side of the stem base. *G. resinaceum* is a principal fungal decay pathogen that in its advanced stages can cause brittle stem failure. The canopy has recently been heavily pruned and reduced in height, leaving large pruning wounds and a vastly reduced canopy spread. The tree has, in effect, been pollarded; whether it will respond well to this treatment, and also accommodate the decay in the longer term, remains uncertain.



Figure 5 2 *Ganoderma resinaceum* brackets at base of red oak (T14).



Figure 6 Heavy pruning of T14

- 4.9 To the east of site are several tree groups, 3 of which comprise small trees and shrubs that include hawthorn, blackthorn, goat willow and hazel (G9, G10 and G12). There are also several individuals in this area including 3 whitebeam trees and a wild cherry (T20, T21, T22 and T24). The most prominent trees in this area are an individual beech tree (T25) and 2 fastigate hornbeam trees (G15). These trees are all middle age and in good condition. All 3 trees grow in close proximity to one another, particularly the 2 trees in G15, and form one canopy feature within the landscape.



Figure 7 Middle age beech (T25) and 2 middle age fastigate hornbeam trees (G15).

- 4.10 1 whitebeam tree (T20) in the eastern part of the site has fungal fruiting bodies of principal decay species *Meripilus giganteus* and *Kretzschmaria deusta*. The fruiting bodies are located between the buttresses and at the base on the south-east side of the tree. These fungi cause butt and root decay and can cause trees to fail with little warning due to the lack of associated foliar symptoms. Therefore this tree is not suitable for retention within the current context of the site, irrespective of development.



Figure 8 *M. giganteus* and *K. deusta* fungal fruiting bodies at base of T20

- 4.11 Tree and group locations, their quality categories and canopy spreads are shown on Drawing 1.

Tree Quality Categorisation

- 4.12 Under BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, trees and groups are objectively assigned a quality category to quantify their value within any future development. The table below contains a summary of the categories presented in the British Standard. The full table has been reproduced at Appendix B.

Table 1 Summary of BS 5837 tree quality categorisation criteria

Category A	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value
Category B	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value
Category C	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
Category U	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infectious pathogens that threaten other trees

5.0 Impacts of the Proposed Development

- 5.1 The proposed development will be completed over five phases: one pre-construction phase and four construction phases. All tree removal and pruning works will be completed as part of the pre-construction phase.
- 5.2 This section describes the number and quality of trees that would be removed in order to facilitate the development proposals across the entire site and all phases, and those that can be retained. This is the result of an assessment based on the General Arrangement Plans.
- 5.3 Hedgerows have not been afforded a quality value as they do not fall within the scope of BS 5837:2012.

Table 2 Arboricultural impacts of development by quality category⁴

	Category A	Category B	Category C	Category U	Hedge
Features that would be retained	T13, T15, T16, T17, T18, T29 G17	T5, T8, T9, T14, T21, T22, T24, T25, T26, T27, T28, T32, T33, T34 G1, G4, G13, G15, G19	T2, T3, T4, T6, T7, T11, T12, T18, T23, T30, T31 G3, G5, G6, G9, G10, G12, G14, (G18), G20, G21, G22, G24	None	H1, H2, H5
Total	7	19	22 (1)	0	3
Features that would be removed	None	T1	G2, (G16), (G18), G23	None	H4
Total	0	1	2 (2)	1	1
Features outside the application boundary	None	T19 G7, G11	T10 G8	None	H3
Total	0	3	2	0	1

(Features in brackets are those of which a part would be removed and part retained)

⁴ See Appendix 1, Arboricultural Survey Data for sub-categories

Pre-Construction Phase

- 5.4 9 trees (recorded as 1 individual tree (T1) and 4 groups) and 5 linear metres of hedge would be removed to facilitate the development proposals.
- 5.5 1 individual tree (T20) is unsuitable for retention within the context of the site due to infection with 2 principal decay fungi. It should therefore be removed irrespective of any development proposals on grounds of safety.
- 5.6 The proposed tree removal can be characterised as a limited loss of small trees, with none being of high quality.
- 5.7 The majority of tree removal would be associated with the pedestrian footways and surfacing around the temporary classrooms to the west, and with the alteration of the infant school entrance to the south. 1 tree will need to be removed to accommodate the infant school building extension. Hedgerow loss is associated with the demolition of an existing building and expansion of the existing car park.
- 5.8 The most significant arboricultural impact would be the loss of 2 Category B trees; 1 to the west of the site (T1) and the southernmost tree in linear group G16. The removal of the tree within G16 would be necessitated by the proposed infant building extension. The removal of T1 would be required to accommodate widening the site access during the enabling works. The primary function of these trees is the provision of amenity for school users, a value that could readily be recreated via new planting in other locations in the medium term.
- 5.9 5 trees, comprising 1 tree from within G18 and all 4 trees within G23, would be removed to accommodate the proposed re-landscaping of the infant school entrance off Avondale Drive. These are low quality (Category C) trees, namely due to their size, age and/or condition, and their function is primarily localised amenity within the site, which could be recreated in the short term through replanting in the adjacent soft landscaping.
- 5.10 The siting of the temporary accommodation block and installation of a proposed 2.4m high fence to the south of the refurbished infant entrance area will necessitate the pruning of 1 tree on the northern site boundary (T13) and 1 tree group (G20). The south-western canopy of tree T13 would be reduced by circa 1.8m to the nearest suitable growing point. The north-western canopy of G20 would be reduced by circa 1m. Pruning in both instances would be relatively minor and would be tolerable to the trees without resulting in long term detriment to their existing quality, condition or longevity.

Construction Phases 1 to 4

- 5.11 A number of trees can be retained within the proposed development, but this will necessitate the use of special construction methodology including above ground 'no-dig' construction of surfaces; supervised removal of hardstanding and resurfacing; careful design and installation boundary treatments; supervised drainage installation; and demolition phase tree protection. The locations of areas requiring special a construction methodology are shown on Drawing 3 and should be detailed within an Arboricultural Method Statement. Without this detail and compliance with the measures it contains, damage and/or loss of additional trees would occur.

- 5.12 Where planning permission is granted, the retention schedule shown above and on Drawing 2 would normally form a part of that permission. Any change to this schedule may therefore require an application to vary the consent.

6.0 Tree Protection Requirements

- 6.1 The following information sets out the primary considerations in determining the requirement for tree protective measures and in the assessment of development impact.

Root Protection Areas

- 6.2 As per BS 5837:2012, the Root Protection Area (RPA) is calculated using each tree's diameter at 1.5 metres⁵ and represents the minimum area around each tree that must be left undisturbed to ensure its survival.
- 6.3 Tree roots typically spread two times the width of the crown, although this figure may be significantly increased for certain species and where specific ground conditions are present. The majority of tree roots are found in the top 600mm of soil and most of the fine roots that absorb water and nutrients are found close to the surface.
- 6.4 The morphology of roots is influenced by past and present site conditions (including roads, buried structures and underground services), soil type, topography and drainage. This means that a tree's roots may not be uniform in extent and the RPA may not be a circular area centred on the tree stem.
- 6.5 On this site, likely barriers to root growth include hardstanding areas such as playgrounds, footpaths and an access road. Roots are unlikely to be absent in all these areas but where unfavourable conditions exist, growth will certainly be impeded.
- 6.6 The RPA has been adjusted or offset where appropriate to most accurately represent the likely spread of roots for each individual tree⁶.

Ground Contamination

- 6.7 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any tree due to the risk of soil contamination caused by accidental spillage.
- 6.8 Particular care must be taken when working on or close to sloping ground to avoid unintentional runoff into the rooting area of retained trees.

Underground Utility Issues

- 6.9 The installation of buried utilities and drainage would be as per the External Drainage Strategy (ref: MIN-TER-00-GF-DD-C-920030, Rev C03) and the Proposed Temporary Classrooms External Drainage Strategy GA (ref: MIN-TER-00-GF-DD-C-920025, Rev P06).
- 6.10 Where the installation of services within the Construction Exclusion Zone of retained trees is unavoidable, appropriate work methods will be required to ensure the safe long-term survival of those trees. This process should be detailed within an Arboricultural Method Statement and is likely to be more expensive than conventional trench installation.

⁵ Refer to Appendix A for RPA area calculations

⁶ See Drawing 1 for RPA shapes

Ground Level Changes

- 6.11 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor changes (up to 100mm) can be tolerated in some cases but is heavily dependent on tree species, condition and growing environment.
- 6.12 Existing ground levels within the Construction Exclusion Zone should be maintained. The advice of a qualified Arboricultural Consultant should be sought if level changes are required.

Drainage & Storm Water Run-off Issues

- 6.13 Drainage and storm water run-off requires due consideration to prevent excessive and/or polluted run-off into the rooting area of trees to be retained.

7.0 Recommendations

7.1 The following measures should be secured by planning condition or other agreement:

Tree Work

7.2 In addition to the tree removal and works proposed for development, the tree surgery operations presented below are also recommended irrespective of any development.

Table 3 Recommended tree surgery works

Tree survey reference	Tree works description
T14	Biennial inspection to monitor condition of tree and progression of fungal brackets
T20	Fell

7.3 Whilst T14 is in good condition at present, due to its location, possible targets and the significance of the decay that *Ganoderma resinaceum* causes, it is recommended that it is inspected on a biennial basis by a qualified Arboriculturist to monitor the trees condition and the progression of the fungus. Measurements that should be monitored include:

- The size of existing fungal brackets;
- Development and distribution of new fungal brackets;
- Foliage colour of tree canopy in season;
- Wound wood growth;
- Stem hollowing;
- Loss of vigour (e.g. excessive deadwood, canopy dieback);
- Root plate movement and exposure;

7.4 The above list is not exhaustive but it will be important for the information recorded to allow a comparison to be made over time of any change in tree and fungus condition. Where possible observations should be absolute (i.e. measurements taken of bracket size or decay extent). Photographic evidence should also be recorded during each inspection, maintained by the school and provided to the inspecting Arboriculturist to aid decision making.

7.5 A single Category U tree (T20) is situated to the east of the site. This will be unaffected by the development proposals, however due to the presence of 2 principal decay fungi, it is unsuitable for retention within the context of the site and should be felled regardless irrespective of any development proposals. The tree should be replaced, but this is part of routine site management and maintenance and should not be required in association with the development. However, planting and tree works associated with the development may provide an opportunity to replace tree T20 more economically as part of a broader package of works.

- 7.6 All tree surgery work should be carried out by a qualified contractor in accordance with British Standard 3998:2010 Tree work – Recommendations.

Arboricultural Method Statement

- 7.7 Tree Protection Measures and construction methods to prevent harm to retained trees in accordance with BS5837:2012 should be detailed within an Arboricultural Method Statement prior to commencement of development.
- 7.8 The Arboricultural Method Statement should provide details and locations of activities that cannot be completed without it for each of the five phases of development (pre-construction phase and four construction phases).
- 7.9 The scope of the Arboricultural Method Statement and the locations of activities are illustrated on an Arboricultural Method Statement Heads of Terms Plan at Drawing 3.

Level change, utilities and drainage

There should be no level change, or installation of buried utilities or drainage within any Root Protection Area⁷ unless it can be demonstrated within the AMS that this will be done without deterioration in tree condition.

Mitigation for the removal of trees

- 7.10 The National Planning Policy Framework (NPPF) is a material consideration in the planning process and promotes a presumption in favour of sustainable development. In terms of the natural environment, development should minimise impacts on biodiversity and provide a net gain in biodiversity where possible.
- 7.11 In respect of trees, a sustainable development will be one whereby the total number, value or function provided by trees is maintained or increased or where the long-term prospects of the existing tree stock can be substantially improved. Net gains in biodiversity may be demonstrated where the number of tree species, variety of tree ages or range of niche habitats can be increased. Native, old, large or dead trees are likely to have a relatively significant impact on a scheme's environmental credentials, as will the connectivity of trees, hedges and woodland.
- 7.12 9 trees would be removed as part of the development proposal. Mitigation for the loss of amenity and associated habitat may be required in the form of replacement tree planting.

Planting

- 7.13 New planting is proposed and detailed on the Planting Plan (ref: MIN-UBU-XX-GF-DR-L-3000 to 3004).
- 7.14 The proposed replacement tree planting comprises four extra heavy standard whitebeam trees (*Sorbus aria*) which is fewer trees than would be removed. There would therefore be a net reduction in tree cover, although this would be relatively small due to the size and age of the trees proposed for removal.

⁷ As per Drawing 2

- 7.15 The planting scheme includes a smaller range of species than would be removed and therefore would reduce biodiversity in this respect, although this would also be relatively minor across the site as a whole.
- 7.16 The average mature size of tree species on the site would be unaffected by the proposed development and planting scheme.
- 7.17 The distribution and connectivity of tree cover would be unaffected by the proposed development and planting scheme other than by the net reduction in canopy area.
- 7.18 Provision should be made for the maintenance of new planting in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape - Recommendations, and replacement of failures for a period of at least 5 years.
- 7.19 The extent of mitigation planting will ultimately be determined in agreement with the LPA.

Post Construction Tree Care

- 7.20 Hazard recommendations are based on observations at the time of survey. Trees are dynamic living organisms whose structure is constantly changing. Even those in good condition can suffer from damage or stress. Following site development, regular (annual or biennial) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.

APPENDIX A: Arboricultural Survey Data

APPENDIX A: Arboricultural Survey Data Sheets



Surveyor [Heather Eilbeck](#)
 Date [16.12.2020](#)
 Town [Hayes](#)
 Site [Minet Infant and Junior School](#)
 Dwg Ref [D8568.001](#)

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
Trees																			
T1	Rowan	6.0	250	1.0	2.0	2.0	2.0	3.5	2.0	W	Middle Age	Good	Slight lean to north-east, crown lifted, occluding basal wound, located in grass area immediately adjacent to footpath and NHS car park, no major defects noted.	B,1	3.0	28.3		Long	N
T2	Bird cherry	5.0	150	1.0	2.5	2.5	2.5	2.5	2.0	W	Middle Age	Good	Car park tree located in grass area, rounded form, no major defects noted.	C,1	1.8	10.2		Long	N
T3	Bird cherry	6.0	150	1.0	1.5	1.5	1.5	1.5	1.0	SE	Middle Age	Good	Car park tree located within hedge, rounded form, no major defects noted.	C,1	1.8	10.2		Long	N
T4	Bird cherry	5.0	100	1.0	1.5	1.5	1.5	1.5	1.0	NE	Young	Good	Car park tree located in grass area, rounded form, no major defects noted.	C,1	1.2	4.5		Long	N
T5	Beech	12.0	600	1.0	7.0	6.0	6.0	7.0	2.0	W	Middle Age	Good	Multi-stem at 2m, crown lifted, base obscured by holly shrub and bramble, 1 limb to east wounded previously by minor limb failure that has left a tearing wound, no major defects noted.	A,1,2	7.2	162.9		Long	N
T6	False acacia	13.0	500	1.0	6.0	5.0	4.0	3.0	6.0	W	Middle Age	Fair	Previously failed limbs, crown lifted, leans to east, cavity from previous limb failure in main western stem at 6m, bifurcate at 6m, suppressed canopy to east and west.	C,1,2	6.0	113.1		Medium	N
T7	False acacia	13.0	710	1.0	6.0	6.0	6.0	4.0	5.5	W	Mature	Fair	Previously failed limbs, crown lifted, leans to east, bifurcate at 6m, minor deadwood in canopy.	B,1,2	8.5	228.0		Medium	N
T8	Norway maple	11.0	550	1.0	5.5	7.0	6.0	6.0	2.0	SW	Middle Age	Good	Good form, rubbing limbs, crown lifted, multi-stem at 2m, minor ivy growth, no major defects noted.	B,1,2	6.6	136.8		Long	N
T9	Hornbeam	11.0	500	1.0	5.0	6.5	5.5	5.0	1.0	NE	Middle Age	Good	Good crown form, leans to east, crown lifted, minor ivy growth, multi-stem at 2m, minor deadwood, no major defects noted.	B,1,2	6.0	113.1		Long	N
T10	Holly	8.0	320	1.0	2.0	1.5	2.0	2.0	1.0	N	Middle Age	Good	Ivy growth on stem, third party tree adjacent to site boundary, bifurcate at circa 1.7m with tight union and reaction wood rib evident below union.	C,1	3.8	46.3		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T11	Whitebeam	7.0	600	1.0	4.5	4.0	4.0	3.0	2.0	N	Middle Age	Fair	Ivy growth on stem, adjacent to third party sheds, crown lifted, pruned and reduced in height previously, deadwood up to 50mm in lower canopy, occluding wound with decay on top of southern stem, slight lean to east, multi-stemmed at circa 1.7m with tight unions, small decaying central stem located off tearing wound from previous stem failure, northern limb has occluding wound located on top.	C,1	7.2	162.9		Short	N
T12	Whitebeam	5.0	410	1.0	1.5	4.0	3.0	3.0	2.5	E	Middle Age	Fair	Heavily pruned and reduced in height particularly to west and north canopy, crown lifted, multi-stem at 1.7m, 1 small dead central stem.	C,1	4.9	76.0		Medium	N
T13	Red oak	14.0	550	1.0	12.0	10.0	8.0	7.0	2.5	SW	Middle Age	Good	Bifurcate at 2.5m, slight lean to south-west, some epicormic growth on main limbs and stems, good vigour, crown lifted, some occluding wounds evident, no major defects noted.	A,1,2	6.6	136.8		Long	N
T14	Red oak	11.0	680	1.0	4.0	5.0	3.0	1.0	3.0	SW	Mature	Fair	Remnants of Ganoderma resinaceum brackets at base on south-west side, some epicormic growth on main stem and limbs, leans to south, heavily reduced in height and width with large pruning wounds evident, ivy on stem.	B,2	8.2	209.2	Annual inspection to monitor condition of tree and progression of fungal brackets.	Medium	N
T15	Red oak	13.0	690	1.0	9.0	11.0	9.0	7.0	2.0	S	Mature	Good	Leans to west, crown lifted, some epicormic growth, good vigour, asymmetrical lower canopy due to lower limb removals to north and north-east side of canopy, no major defects noted.	A,1,2	8.3	215.4		Long	N
T16	Red oak	13.0	620	1.0	9.0	9.0	8.0	8.0	2.0	W	Middle Age	Good	Crown lifted, leans to east, some epicormic growth, some phototropic growth of western limbs due to T15, occluding pruning wounds with degradation.	A,1,2	7.4	173.9		Long	N
T17	Tree of heaven	14.0	760	1.0	9.0	8.0	9.5	7.0	3.0	E	Mature	Good	Tree in playground, good form, occluding wound on lower stem, surface rooting, multi-stem at 2.5m, crown lifted, bark damage with some minor decay evident, surface rooting cracking the adjacent tarmac.	A,1,2	9.1	261.3		Long	N
T18	Tree of heaven	7.0	170	1.0	2.0	2.0	2.5	1.5	2.5	NW	Middle Age	Fair	Small tree, suppressed by T17 to west and north, adjacent to playground and boundary fence.	C,1	2.0	13.1		Medium	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T19	Sycamore	13.0	400	1.0	5.0	5.0	5.0	5.0	2.5	NW	Middle Age	Good	Third party tree adjacent to site, fence obscuring lower stem and base, some deadwood, previous limb failures, dead ivy on tree.	B,1	4.8	72.4		Long	N
T20	Swedish whitebeam	10.0	550	1.0	5.0	4.0	4.0	4.5	2.0	SE	Middle Age	Poor	Asymmetrical crown to east, eastern canopy higher than rest of canopy, crown lifted, multi-stem at 2m, tight unions, slight lean to east, some surface rooting with occluding mower and strimmer damage, slime mould fruiting body located at base on south-east side and also fungal fruiting bodies of giant polypore (Meripilus giganteus) and brittle cinder (Kretzschmaria deusta) located on and between adjacent buttress roots on this side, physiologically healthy but presence of the 2 fungal decay species makes this tree unretainable in the context of the site.	U	0.0	0.0	Fell.	Short	N
T21	Swedish whitebeam	8.0	480	1.0	4.0	5.0	4.5	4.0	2.0	SE	Middle Age	Good	Multi-stem at 2m, tight unions, crown lifted, slight lean to south, fairly well rounded form, no major defects noted.	B,1,2	5.8	104.2		Long	N
T22	Swedish whitebeam	8.0	370	1.0	3.0	3.5	4.0	3.5	2.0	S	Middle Age	Good	Multi-stem at 2m, tight unions, crown lifted, heavily leans to north-east, some surface rooting with occluding mower and strimmer damage, no major defects noted.	B,1,2	4.4	61.9		Long	N
T23	Himalayan birch	5.0	153	2.0	2.0	2.0	2.0	2.0	1.0	E	Middle Age	Good	Bifurcate at 0.5m, in outdoor area with picnic benches, no major defects noted.	C,1	1.8	10.5		Long	N
T24	Flowering cherry	9.0	530	1.0	7.0	8.0	7.0	7.0	1.8	E	Middle Age	Good	Crown lifted, multi-stem at 2m, tight unions with some fusing and inclusion, pruned limbs, wide spreading form, no major defects noted.	B,1,2	6.4	127.1		Long	N
T25	Beech	15.0	650	1.0	7.0	9.5	6.0	7.0	2.5	S	Middle Age	Good	Previously failed limbs, tight unions with rubbing limbs, crown lifted, slight suppression and phototropic limb growth to north due to G15, no major defects noted.	B,1,2	7.8	191.1		Long	N
T26	Field maple	8.0	350	1.0	5.0	5.0	5.0	5.0	2.0	N	Middle Age	Good	Crown lifted and pruned away from building, some flush cuts and occluding pruning wounds, rubbing limbs, in area of hardstanding, multi-stem at 2m, canopy encroaching on telegraph wires above.	B,1	4.2	55.4		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T27	Field maple	10.0	460	1.0	8.0	8.0	6.0	4.5	2.0	SW	Middle Age	Fair	Crown lifted, in infant playground surrounded by hardstanding, slight suppression to south-east due to adjacent tree, surface rooting, pruned away from cables previously although now encroaching again, multi-stem at 2m with some fusing unions, slight lean to east.	B,1,2	5.5	95.7		Long	N
T28	Cherry	9.0	320	1.0	3.0	3.0	3.0	3.0	2.0	SE	Middle Age	Good	Crown lifted, multi-stem at 2m, tight and included unions, slight lean to north-east, rounded canopy form.	B,1	3.8	46.3		Long	N
T29	English oak	15.0	820	1.0	9.0	9.0	9.0	9.0	3.5	NW	Mature	Good	Crown lifted, in hardstanding close to building, road and footpath, bifurcate at 2.5m, good form, epicormic growth throughout, lifting surrounding hardstanding.	A,1,2	9.8	304.2		Long	N
T30	Flowering cherry	7.0	360	1.0	2.0	3.5	2.5	4.5	2.0	S	Middle Age	Fair	Multi-stem at 2m, heavily pruned particularly to the north, in gravel area, epicormic growth, leans to north, surface rooting with some reaction wood growth and disfigurement on east side of base.	B,1	4.3	58.6		Medium	N
T31	Cherry laurel	4.0	224	5.0	2.0	2.0	2.0	2.0	0.5	SE	Middle Age	Good	Maintained and shaped tree in gravel area, multi-stem at base.	C,1	2.7	22.6		Long	N
T32	Silver maple	14.0	500	1.0	7.0	5.0	6.0	6.0	2.0	SW	Middle Age	Good	Crown lifted, in wildlife area, multi-stem at 2m, adjacent to playground, gravel footpath and third party garages, 2 bird boxes in canopy, no major defects noted.	B,1,2	6.0	113.1		Long	N
T33	Cherry	5.0	260	1.0	3.5	3.5	3.5	3.5	2.0	W	Middle Age	Good	In nursery playground, multi-stem at 2m, tight unions, tyre swing tied into canopy.	B,1	3.1	30.6		Long	N
T34	Crab apple	5.0	260	1.0	3.0	2.5	2.5	2.5	2.0	SW	Middle Age	Good	In nursery playground, multi-stem at 2m, tight unions, slight lean to north-east, no major defects noted.	B,1	3.1	30.6		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
Groups																			
G1	Beech	up to 10	390-530	4.0							Middle Age	Good	Linear group, immediately adjacent to footpath and school access road, crown lifted, some tight unions, minor surface rooting evident, no major defects noted.	B,1,2	Refer to Drawing	n/a		Long	N
G2	Bird cherry	up to 6	170, 180	2.0							Middle Age	Good	2 planted trees in close proximity to footpath and fence, no major defects noted.	C,2	Refer to Drawing	n/a		Long	N
G3	Wild cherry, bird cherry	up to 7	180, 269	2 trees							Middle Age	Good	2 trees, 1 bifurcate and 1 single stem, wild cherry adjacent to school car park and third party garage access road, no major defects noted.	C,2	Refer to Drawing	n/a		Long	N
G4	Lawson cypress	up to 10	120-250	c. 15							Middle Age	Good	Screening group, multi-stems, tight unions, closely spaced group, no major defects noted.	B,2	Refer to Drawing	n/a		Long	N
G5	Norway maple, holly, elder, false acacia	up to 4.5	50-100	c. 75							Young to Middle Age	Fair	Sporadic patches of holly, elder and false acacia along boundary, group overgrown with dense bramble.	C,2	Refer to Drawing	n/a		Medium	N
G6	Holly, hawthorn, hornbeam, sycamore, elm, beech, yew	up to 4.5	50-140	c. 50							Young to Middle Age	Good	Group along site boundary fence, screening group, could be brought into maintenance as hedge.	C,2	Refer to Drawing	n/a		Long	N
G7	Sycamore, yew, crack willow, hawthorn, holly	up to 14	120-500	c. 100							Middle Age	Fair	Heavily ivy clad stems, crown lifted, leaning stems, closely spaced group, third party trees adjacent to site, leaning stems, previously failed limbs and stems, occasional standing dead stems in group, multi-stems, no access to area during survey.	B,2,3	Refer to Drawing	n/a		Long	N
G8	Crack willow, common ash, hawthorn, sycamore	up to 15	100-650	c. 40							Middle Age to Mature	Varied	Screening group, woodpecker holes, third party trees adjacent to site boundary, occasional dead stems within group, some heavily leaning stems, multi-stems, crown lifted, heavily ivy clad stems and fence obscuring lower bases and stems - no access during survey, previous limb and stem failures including 1 to east end of group that is hung up over fence, various sized deadwood throughout, some trees have been topped and pruned heavily, densely overgrown in places, bat potential, collectively of higher value as a landscape feature.	B,2,3	Refer to Drawing	n/a		Medium	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G9	Wild cherry, bird cherry, hornbeam	up to 10	50-300	c. 25							Middle Age	Fair	Group in corner of playing field adjacent to fence, multi-stems, leaning stems, tight and included stem unions, failed minor to moderate deadwood and limbs, ivy growth on some stems.	C,2	Refer to Drawing	n/a		Medium	N
G10	Hazel, wild cherry, goat willow, blackthorn	up to 6	50-140	c. 30							Middle Age	Good	Boundary group adjacent to fence, multi-stems, dense blackthorn that is heavily overgrown with climbing plant.	C,2	Refer to Drawing	n/a		Long	N
G11	Japanese cedar	up to 11	400, 400, 400	3 trees							Middle Age	Good	Slight lean to north, third party trees, fence heavily clad with climbing plants obscuring view of bases and lower stems - also no access during survey.	B,1	Refer to Drawing	n/a		Long	N
G12	Rowan, beech, horse chestnut, field maple	up to 10	75-280	c. 17							Young to Middle Age	Fair	Boundary group adjacent to fence, epicormic growth at base of larger trees in group, multi-stems, tight unions, ivy growth on stems.	C,2	Refer to Drawing	n/a		long	N
G13	Sycamore, yew, hawthorn, hornbeam, elder	up to 15	120-400	15 trees							Middle Age	Good	Multi-stems, tight unions, adjacent to fence on boundary, minor deadwood, rubbing limbs, 1 bifurcate sycamore in group (largest tree) has an included stem union, trees have tall and narrow forms.	B,2	Refer to Drawing	n/a		Long	N
G14	Ash, elder, dog rose	up to 5	50-130	4 trees							Middle Age	Fair	4 trees that are all third party except elder, some growing and occluding into fence, adjacent to garages, mature dog rose with thick stems within group.	C,2	Refer to Drawing	n/a		Medium	N
G15	Fastigate hornbeam	up to 14	520, 530	2 trees							Middle Age	Good	Canopies growing together as one feature, previous failures of deadwood limbs, multi-stems, tight unions, crown lifted, occluding pruning wounds, easternmost tree in group leans to north-east.	B,1,2	Refer to Drawing	n/a		Long	N
G16	Wild cherry, lime, rowan	up to 7	160-280	4 trees							Middle Age	Good	Trees in infant playground in hardstanding, crown lifted, stems lean to east and south, multi- stems, group in predominantly good condition except for cherry closest to road which is in fair condition, roadside cherry has had stems removed previously and has decay and canker in the main union.	B,1,2	Refer to Drawing	n/a		Medium	N

APPENDIX A: Arboricultural Survey Data Sheets

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G17	Red oak, Norway maple	up to 15	540, 620, 640	3 trees							Middle Age	Good	Crown lifted, on slight raised ground level, adjacent to footpath, stems lean to east slightly, bracing in oak that appears to be slack and not providing any support, oak tree has been reduced in height previously with subsequent regrowth from pruning wounds, all trees are bi/trifurcate at circa 2.5m.	A,1,2	Refer to Drawing	n/a		Long	N
G18	Whitebeam, apple	up to 6.5	150, 180, 240	3 trees							Middle Age	Fair	Crown lifted, some cavities with decay in 2 trees to west of group, 1 tree to east of group topped previously, whitebeam is multi- stemmed at 1.6m with tight unions.	C,1	Refer to Drawing	n/a		Medium	N
G19	Cherry plum	up to 7	360, 400, 420	3 trees							Middle Age	Good	Crown lifted, leaning stems to north and north-east, multi-stems, some tight unions, minor deadwood, rubbing and fusing limbs, bench located in centre of group.	B,1,2	Refer to Drawing	n/a		Long	N
G20	Cherry, apple	up to 4	110, 160	2 trees							Middle Age	Fair	Cherry pruned heavily for size and age of tree, in play area, cherry is staked and leans to south-east, apple typical untidy inner crown structure, both trees have been crown lifted.	C,1	Refer to Drawing	n/a		Medium	N
G21	Sycamore, elder, ash, hawthorn, cherry, goat willow	up to 7	50-200	c. 40							Young to Middle Age	Fair	Ivy clad stems, majority of trees off site, adjacent to boundary fence, closely spaced group, multi-stems, leaning stems, adjacent to third party garages, play area and wildlife area.	C,2	Refer to Drawing	n/a		Medium	N
G22	Elder	up to 4	75-130	10.0							Young to Middle Age	Fair	Adjacent to fence, multi-stems, leaning stems, overgrown with climbing plant.	C,2	Refer to Drawing	n/a		Medium	N
G23	Oak	up to 4	50-75	4 trees							Young	Good	4 basally multi-stemmed trees adjacent to path, grass area, pavement and utility box.	C,2	Refer to Drawing	n/a		Long	N
G24	Laurel, goat willow, cherry	up to 4	50-110	5 trees							Young	Good	5 small planted trees within raised corner plant bed that is timber- edged, slight phototropic growth due to adjacent large maple tree.	C,1	Refer to Drawing	n/a		Medium	N

Hedges

H1	Beech	up to 2	50-75	N/A							Middle Age	Good	Maintained hedge around car park.		Refer to Drawing	n/a		Long	N
H2	Beech	up to 2	50-75	N/A							Middle Age	Good	Maintained hedge around car park.		Refer to Drawing	n/a		Long	N
H3	Beech	up to 3.5	75-100	N/A							Middle Age	Good	Maintained third party hedge in back garden.		Refer to Drawing	n/a		Long	N
H4	Rose, dog rose	up to 1.5	50-75	N/A							Mature	Good	Maintained hedge adjacent to building.		Refer to Drawing	n/a		Long	N
H5	Dog rose, elder, holly	up to 2	50-75	N/A							Middle Age	Good	Maintained boundary hedge.		Refer to Drawing	n/a		Long	N

APPENDIX B: Survey Method

APPENDIX B: Survey Method

The survey of trees is conducted from ground level only. The nature of the soils on site is not assessed.

Trees are dynamic living organisms with a constantly changing structure; even trees in good condition can suffer from damage or stress. The information recorded is presented as being correct at the time of survey.

The following features of each tree, group of trees or wood may have been recorded in the Arboricultural Survey Data Sheets at Appendix 1.

Species	The common name is given. The Latin name may also be given if further clarification is required.	
Height	Top height of tree recorded in metres.	
Stem Diameter	For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres. For multi-stemmed trees an average all stems measured at 1.5m above ground level is used. For tree groups a range from minimum to maximum diameters is provided based on measurements taken using one of the aforementioned methods.	
No. of Stems	A count of stems arising below a height of 1.5 metres.	
Crown Spread	The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.	
Height of Lowest Branch	Crown clearance above ground level recorded in metres.	
Direction of Lowest Branch	The direction of growth of the first significant branch from the point of attachment.	
Maturity	Young	Trees that can reasonably be relocated or replaced like for like, without undue cost;
	Middle Age	Trees in the established growth stage of their life with the potential to continue increasing in size;
	Mature	Trees that have reached their ultimate size, given their location and surroundings;
Condition	Good, Fair, Poor. An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account. Veteran. Trees that are in such a condition as to significantly increase their biological, cultural or aesthetic value. This is characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.	
Comments	A brief evaluation and description of the tree with comments on form, vitality, health and any significant defects or symptoms of ill-health.	

BS 5837 Tree Quality Assessment

The tree quality assessment is based on Table 1 of BS 5837:2012 (See below). Four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category (the subcategories may be used in combination but do not accumulate collective weight).

Root Protection Area (RPA)

The RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m²) and as the radius of a circle (m) typically plotted from the centre of the stem.

The RPA is calculated using a mathematical equation included in BS 5837:2012 (Section 4.6 and Table D.1) and is based on a tree's stem diameter. In some cases the RPA may need to be adapted to best reflect the likely area and position of roots required to ensure survival; this may be based on criteria such as the tree's condition, species, crown spread and any barriers to growth. Any alteration must be justifiable but is made at the Arboricultural Consultants discretion.

Recommendations

Recommendations for arboricultural works, etc. are based on the **current** land use, and take into account the tree or group attributes without bias to the proposed development.

Estimated Remaining Contribution

An estimation of the life expectancy as healthy functioning tree. This will be influenced by species and the condition of the tree at the time of survey.

Long	> 40 years
Medium	20 – 40 years
Short	less than 20 years

APPENDIX B: Survey Method

Table 1 Cascade chart for tree quality assessment

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	- 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 the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	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	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)	See Table 2
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	See Table 2
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	See Table 2

British Standards Institute (2012) *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.*
p.9

NOTES:

All young trees are assessed as quality category 'C' but this does not preclude their retention within a development.

For hedges the height, canopy spread and number of stems is recorded but they are not assigned a quality category.

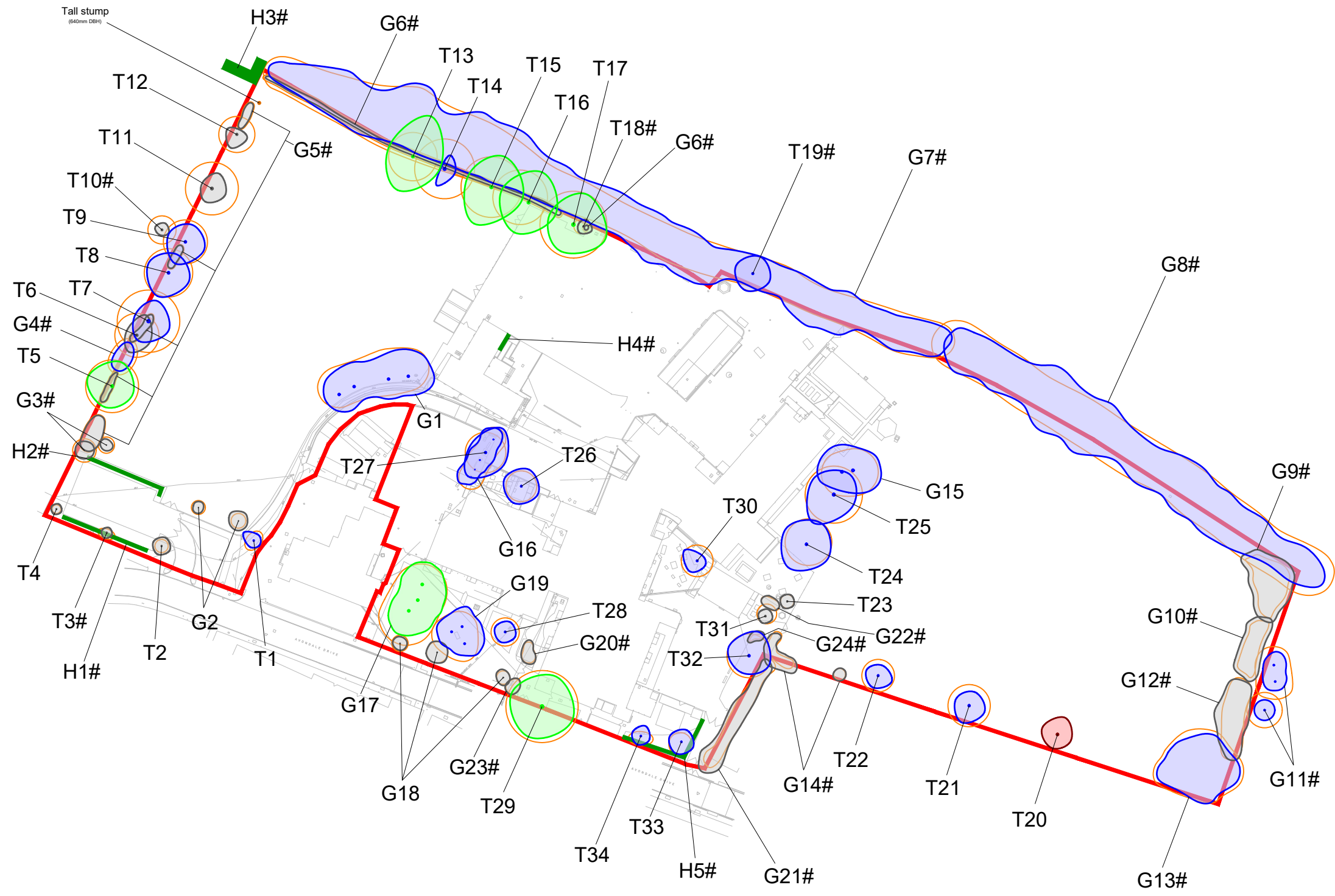
DRAWINGS

Drawing 1 - Tree Constraints Plan

Drawing 2 - Tree Works Plan

Drawing 3 - Arboricultural Method Statement Heads of Terms Plan

Drawing 4 - Approximate Construction Phases Plan



KEY

[This drawing must be reproduced in colour]

T1/G1

Trees and Groups

H1

Hedgerow

Root Protection Area (RPA)

Stump

Application Boundary

#

Approximate location
(Feature not shown on supplied topographical survey)

Tree Quality Categorisation

(Based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations)

Category A

(High quality)

Category B

(Moderate quality)

Category C

(Low quality)

Category U

(Unsuitable for retention)

Hedgerow

(Not categorised)

NOTE: This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).

Rev	Description	Drawn	Approved	Date

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Arboricultural Impact Assessment

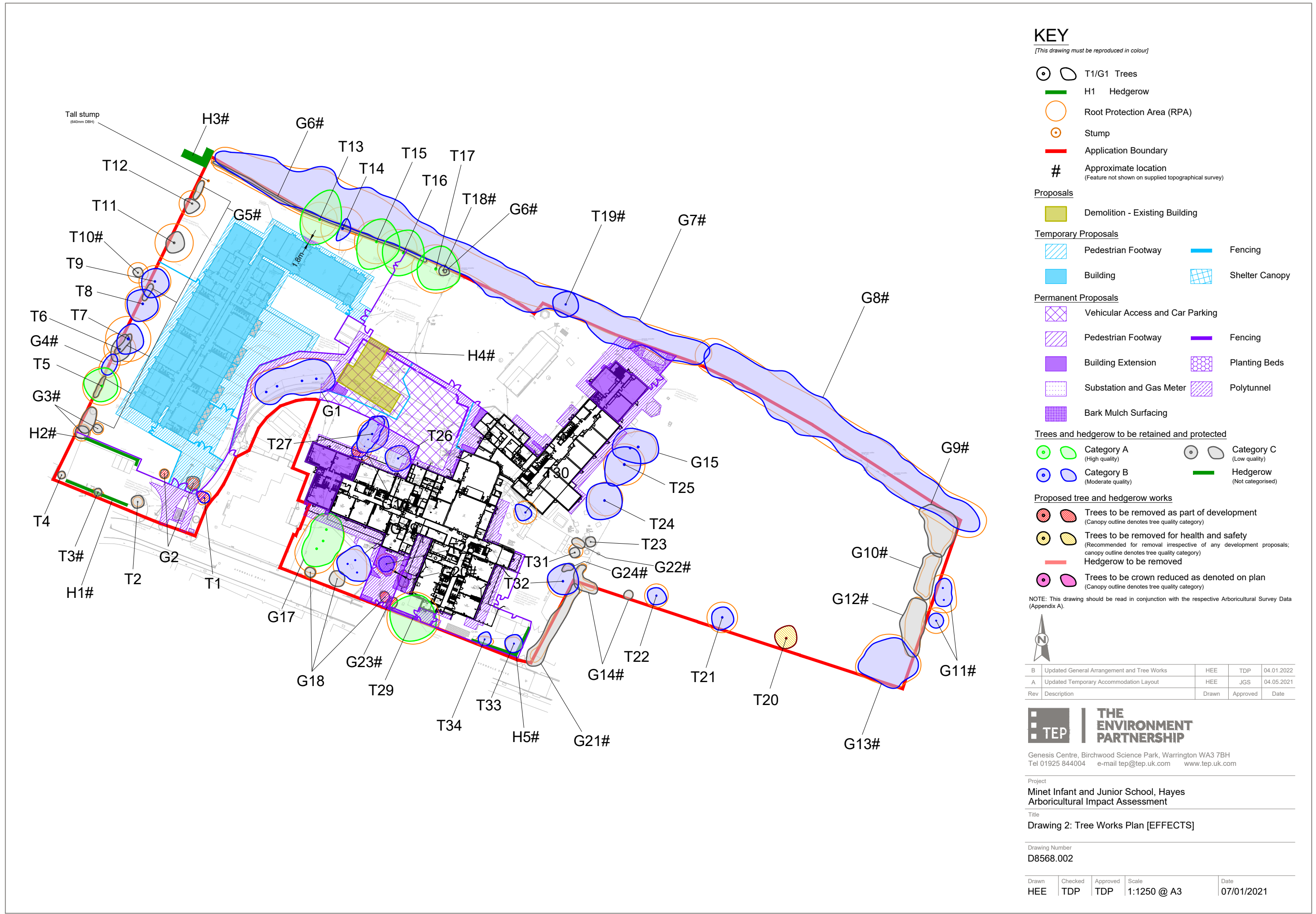
Title

Drawing 1: Tree Constraints Plan [BASELINE]

Drawing Number

D8568.001

Drawn	Checked	Approved	Scale	Date
HEE	AAB	JGS	1:1250 @ A3	22/12/2020



KEY

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- T1/G1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Stump
- Application Boundary
- # Approximate location (Feature not shown on supplied topographical survey)
- Proposals**
 - Demolition - Existing Building
- Temporary Proposals**
 - Pedestrian Footway
 - Building
 - Fencing
 - Shelter Canopy
- Permanent Proposals**
 - Vehicular Access and Car Parking
 - Pedestrian Footway
 - Building Extension
 - Substation and Gas Meter
 - Bark Mulch Surfacing
 - Fencing
 - Planting Beds
 - Polytunnel
- Trees and hedgerow to be retained and protected**
 - Category A (High quality)
 - Category B (Moderate quality)
 - Category C (Low quality)
 - Hedgerow (Not categorised)
- Proposed tree and hedgerow works**
 - Trees to be removed as part of development (Canopy outline denotes tree quality category)
 - Trees to be removed for health and safety (Recommended for removal irrespective of any development proposals; canopy outline denotes tree quality category)
 - Hedgerow to be removed
 - Trees to be crown reduced as denoted on plan (Canopy outline denotes tree quality category)

NOTE: This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).



B	Updated General Arrangement and Tree Works	HEE	TDP	04.01.2022
A	Updated Temporary Accommodation Layout	HEE	JGS	04.05.2021
Rev	Description	Drawn	Approved	Date



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Arboricultural Impact Assessment
Title
Drawing 2: Tree Works Plan [EFFECTS]

Drawing Number
D8568.002

Drawn	Checked	Approved	Scale	Date
HEE	TDP	TDP	1:1250 @ A3	07/01/2021

Arboricultural Method Statement
Heads of Terms

Where construction activities are proposed within the Root Protection Area of retained trees based on the proposed layout, these are highlighted on the plan opposite. Further information, assessment and details of special construction methodology that apply to these highlighted areas are provided in the form of an Arboricultural Method Statement (document ref: 8568.02.001) to ensure adequate protection is afforded to trees during and post construction.

The Arboricultural Method Statement (AMS) has been produced following a review of the following plans:

- General Arrangement Plans (ref: MIN-UBU-XX-GF-DR-L-0005, Rev P03 & MIN-UBU-04-GF-DR-L-1024, Rev C03)
- External Drainage Strategies (ref: MIN-TER-00-GF-DD-C-920030, Rev C03 & MIN-TER-00-GF-DD-C-920025, Rev P06)

The AMS details special construction methodology required over each phase of construction, inclusive of the pre-construction phase, with regards to the following activities:

- (a) Boundary treatments within the Root Protection Areas (RPA) of retained trees;
- (b) Excavation and installation of drainage within the RPA of retained trees;
- (c) Removal of existing surfacing (hard surfacing and artificial grass) with the RPA, or in close proximity to, retained trees;
- (d) Demolition of an existing building adjacent to retained trees;
- (e) Construction of a permanent footpath using above ground 'no-dig' construction within the RPA of retained trees; and
- (f) Soft landscaping within the RPA, or in close proximity to, retained trees.



KEY

[This drawing must be reproduced in colour]

- T1/G1 Retained trees and groups
- H1 Retained hedgerow
- Root Protection Area (RPA)
- Stump
- Application Boundary
- # Approximate location
(Feature not shown on supplied topographical survey)

Special mitigation requiring an Arboricultural Method Statement

- Boundary Treatments
- Excavation and Installation of Drainage
- Removal and Resurfacing of Hard Standing
- Removal of Artificial Grass Surfacing
- Demolition of Existing Building
- Above Ground 'No-dig' Construction
- Soft Landscaping



B	Updated General Arrangement and AMS Activities	HEE	TDP	04.01.2022
A	Updated Temporary Accommodation Layout	HEE	JGS	04.05.2021
Rev	Description	Drawn	Approved	Date



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Title
Drawing 3: Arboricultural Method Statement Heads of Terms
Plan [EFFECTS]

Drawing Number
D8568.003

Drawn	Checked	Approved	Scale	Date
HEE	TDP	TDP	1:1250 @ A3	07/01/2021



KEY

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Application Boundary

Construction Phasing

Approximate Phase 1 Area

Approximate Phase 2 Area

Approximate Phase 3 Area

Approximate Phase 4 Area



Rev	Description	Drawn	Approved	Date
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Arboricultural Impact Assessment

Title

Drawing 4: Approximate Construction Phases

Drawing Number

D8568.004

Drawn	Checked	Approved	Scale	Date
HEE	TDP	TDP	1:1250 @ A3	05/01/2022



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