



ARBORICULTURAL IMPACT ASSESSMENT, TREE PROTECTION PLAN AND METHOD STATEMENT

SITE: 10 Jackets Lane,
Northwood,
HA6 2SH

CLIENT: Shanly Homes

May 2017

Ref: DAA TPP AMS 03

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Executive Summary:

This tree report and tree protection plan complies with the planning policies of the London Borough of Hillingdon and with the recommendations of British Standard BS 5837: 2012, 'Trees in relation to design, demolition and construction – Recommendations' (BS 5837).

The site was surveyed in July 2015 and August 2015. A total of 33 individual trees, four groups and four hedges are listed within the tree survey schedule at Appendix 1.

The key arboricultural features of the site are the off-site Sweet Chestnut T48 growing adjacent to Jackets Lane, the two mature Oaks growing within the rear garden T10 & T11, and the off-site multi-stem Ash T19 growing within the open field to the north.

The site is not within a Conservation Area. Two trees, Oak T10 and Oak T11, within the site are protected by a tree preservation order.

The tree protection plan at Appendix 2 shows an overlay of the proposals with the details gathered from the tree survey.

The proposals require only category 'C' trees to be removed. These are of low quality, or landscape value or a combination of these.

The arboricultural method statement at section 3 of this report provides a heads of terms regarding the necessary protective measures to ensure there is no significant long term detrimental impact to any of the retained trees.

Subject to the measures recommended within the arboricultural method statement being secured by an appropriate planning condition, and a suitable mitigation landscaping scheme, I consider that the proposals will have an insignificant impact on the character and appearance of the locality.

1. Introduction.

- 1.1.1 The purpose of this report is to assess the arboricultural implications of the proposals and to detail what actions need to be taken to prevent unacceptable damage occurring to the retained trees on this and the adjacent sites during the proposed re-development of the land at 10 Jackets Lane, Northwood HA6 2SH.
- 1.1.2 This tree impact assessment and method statement have been drawn up to comply with the planning policies of the London Borough of Hillingdon which requires that an Impact Assessment (AIA), Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) are submitted as part of the planning application process to demonstrate how any potential damage to retained trees may be mitigated.
- 1.1.3 This report also complies with the recommendations of British Standard BS 5837: 2012, *'Trees in relation to design, demolition and construction – Recommendations'* (BS 5837).
- 1.1.4 The method statement is designed to reflect the principles of the tree protection required for the proposed development and should not be read as a definitive engineering or construction statement for this site. Matters relating to construction detail or engineering performance should be referred to a qualified structural engineer for further information and specification.

2. Arboricultural Impact Assessment.

2.1. Key Features:

- 2.1.1 The key arboricultural features of the site are: the off-site Sweet Chestnut T48 growing adjacent to Jackets Lane; the two mature Oaks growing within the rear garden T10 & T11, and the off-site multi-stem Ash T19 growing within the open field to the north.

2.2. Statutory Protection:

- 2.2.1 The site is not within a Conservation Area. Two trees, Oak T10 and Oak T11, within the site are protected by the tree preservation order 505 of 1991 of the London Borough of Hillingdon. This is shown on the tree protection plan.

2.3. Tree survey:

- 2.3.1 The site was surveyed in July 2015 and August 2015. A total of 33 individual trees, four groups and four hedges are listed within the tree survey schedule at Appendix 1. The tree protection plan at Appendix 2 shows an overlay of the proposals with the details gathered from the tree survey.

2.4. Tree removals:

- 2.4.1 The proposals require six individual trees to be removed (T14, T38, T41-T43 & T49), a single group G5 and part of group G2 & part of hedges H1 and H4, in order to enable the

proposals. In addition to this Hawthorn tree T6 which is of 4.5m in height with die back and a significant trunk lean, is proposed to be removed on the basis of good arboricultural management.

- 2.4.2 All of the trees proposed for removal are category 'C' and are of no more than 10m in height. These are of low quality, or low landscape value or a combination of these. I therefore consider the loss of these trees could be readily mitigated by a suitable landscaping scheme.

2.5. Pruning:

- 2.5.1 The proposed pruning is minor in extent and will have no long term detrimental effect on the health or longevity of the retained trees. This will allow adequate space to enable construction works and for future growth. All tree works will be carried out to BS 3998:2010.

2.6. Incursions into root protection areas (RPAs):

- 2.6.1 **Excavation:** Two small sections of excavation are required, the first within the RPAs of Hawthorn T39 & Holly T40 to enable the construction of Plot 2 and the second, within the RPA of Ash T45 to enable construction of the garage for Plot 3. Full details of the proposed methodology are provided at paras 3.7.1-3.7.5 below.

- 2.6.2 I consider supervised excavation within these sections of RPA will not have a significant long term detrimental impact to the trees affected, subject to the methodology provided at paras 3.7.1-3.7.5 below being followed to ensure there are no unintentional impacts such as over dig into the RPA.

- 2.6.3 **Above soil surfacing:** The driveway of Plot 4 extends into the RPA of Oak T10 by 4.5%. It is proposed that this driveway is constructed entirely above the existing ground level, using a proprietary cellular confinement system in order that there is no need for excavation within the RPA of T10 and the soil surface within its RPA remains permeable to air, water and oxygen. Full details of the proposed methodology are provided at paras 3.6.1-3.6.5 below.

- 2.6.4 Oak no. 10 is a mature tree of average physiological condition. I consider it would be able to tolerate this small section of its RPA being covered with an above soil surface, subject to the methodology provided at paras 3.6.1-3.6.5 below being followed to ensure no unintentional impacts on the tree.

2.7. Construction of foundations:

- 2.7.1 None of the foundations of plots 1-4 are within the RPAs of retained trees, apart from a small section of the footprint of Plot 2, where manual excavation will be used within the RPAs of trees nos. 39-40: see paras 2.6.1-2.6.2 above.

- 2.7.2 No special construction techniques for foundations are necessary.

2.8. Recommendations:

2.8.1 A suitable arboricultural planning condition is applied to ensure that the detail design takes account of the retained trees in terms of levels, services and surface finishes and a suitable programme of arboricultural supervision is adhered to.

2.8.2 A planning condition is used to secure a suitable mitigation landscaping scheme.

3. Arboricultural Method Statement (AMS).

3.1. Liaison & Communication.

3.1.1 The developer shall appoint an arboricultural consultant to ensure that the specified tree protection measures are carried out during the entire construction process. A copy of the letter of appointment shall be sent to the Local Planning Authority (LPA).

3.1.2 Before any works of any description take place on the site the developer shall convene a pre-start meeting. This should be attended by the developer's contract manager, the site manager, the groundwork contractor, the arboricultural consultant and, if appropriate, the LPA tree officer. The meeting will be led by the arboricultural consultant who will ensure that contact numbers are exchanged and the methods of tree protection outlined in this statement are fully discussed and explained. Any modifications to this statement arising from this meeting will be recorded and the revision circulated to all parties.

3.1.3 The developer shall inform the arboricultural consultant if at any time during the construction process, the site manager is replaced. In this instance the arboricultural consultant will, within 5 days, arrange a meeting with the new site manager to review all the remaining aspects of this method statement.

3.1.4 A copy of this method statement shall be given to all personnel who have control over works of any nature within the Root Protection Areas (RPAs) of the retained trees. The contractor will ensure that adequate instruction is given for the implementation of the protection measures outlined within this statement.

3.2. Tree Removals and Pruning.

3.2.1 The proposed tree works are listed at **Table 1** below.

Tree nos.	Work Required	Reason for work
T14, T38, T41, T42, T43, T49, G5 & partial removal of G2, H1 & H4	Fell and grind out stumps.	To enable the proposals.
T6	Fell and grind out stump.	Good arboricultural management.
T10 & T11	Crown lift to 2.5m	To allow adequate crown clearance with rear gardens.
T39-T40	Crown reduce to boundary line.	To allow adequate room for construction activities and future growth.
G2	Reduce on NW side to 2m from boundary; remove NE end of group to allow 3m clearance from the proposed footprint of Plot2.	

Table 1 – Tree Removals and Pruning.

3.2.2 All tree works will be carried out in accordance with the British Standard, '*Tree Work - Recommendations*', BS 3998: 2010.

3.3. Protective Fencing.

3.3.1 No vehicles of any kind shall enter the site or any works commence until the root protection areas (RPAs) of the retained trees, as shown on the **Tree Protection Plan**, have been protected by the erection of protective fencing to the specification found in BS 5837, Section 6.2. The location of the fencing is denoted by the continuous, bold purple lines on the **Tree Protection Plan (TPP)**.

3.3.2 The fencing shall be at least 2.1m in height and comprise of standard '*Heras*' welded mesh fence panels mounted on a scaffolding framework. The panels shall be fixed to each other with at least two clamps and secured with anti-lift devices to concrete or rubber bases that are pinned to the ground to a depth of 450mm by short lengths of scaffolding tube.

3.3.3 Scaffold uprights shall be at 3.5m centres and supported on the side closest to the retained trees by struts braced to the ground at an angle of 45 degrees. The '*Heras*' panels shall be secured to the two cross members between the uprights with heavy duty cable ties. Notices stating "Tree Protection Zone – Keep Out" will be attached with cable ties to every third panel.

3.3.4 No activity of any kind shall be undertaken behind this protective fencing; there shall be no storage of materials, no access for vehicles or personnel and no excavation or changes in soil level of any kind.

3.3.5 The contractor site huts may, where appropriate, be incorporated into the protective fencing line. If this is so then the location must be agreed in advance with the arboricultural consultant and a method statement supplied that details how the huts are to be erected and supported without compacting the soil within the RPA. Details of

the hut location will be supplied to the LPA in advance of the positioning of the huts on site.

- 3.3.6 Areas for storing or mixing of fuels, oils or cement shall be agreed at the pre-start meeting and marked on site. None of these areas shall be within 10m of any retained tree.
- 3.3.7 No fixtures of any nature shall be attached to the retained trees.
- 3.3.8 Where tall plant or equipment may be passing close to the canopies of the retained trees, timber uprights shall be erected and fastened to the protective fencing. Cross members shall be marked clearly with reflective tape to ensure high visibility.
- 3.3.9 If the protective fencing is accidentally damaged or knocked over, the damaged sections shall be immediately marked with high visibility tape or mesh fencing. The damaged sections should be replaced or repaired to the original specification within 48hrs. All events of this nature must be recorded and reported to the arboricultural consultant.
- 3.3.10 When the installation of the protective fencing is complete, the arboricultural consultant shall be informed so he may come and inspect it. If it complies with this statement he will record the fact and notify the client and LPA.
- 3.3.11 This protective fencing will not be moved or relocated without the prior approval of the arboricultural consultant. When the construction period is complete the fencing may then be removed but only after first informing the arboricultural consultant of this intention.
- 3.4. Ground Protection.
 - 3.4.1 In order to protect the structure of the soil within the RPAs of trees adjacent to areas of construction (T10, T11 & T39-T40), temporary ground protection shall be put into place for the duration of the construction period. This ground protection should be capable of supporting any traffic, pedestrian or mechanical, entering or using the site without being distorted or causing compaction of underlying soil.
 - 3.4.2 The ground protection might comprise of one of the following:
 - For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
 - For pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;

- For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

3.5. Demolition.

3.5.1 Prior to the demolition of the existing house, a Demolition Method Statement shall be submitted to the arboricultural consultant to ensure that there is no conflict with this method statement.

3.5.2 Where possible, existing hard surfaces should be left in situ during the demolition/construction period to provide continuing protection to the RPAs of the retained trees.

3.6. Construction of hard surfaces within RPAs (above ground)

3.6.1 Prior to the commencement of any construction works (other than the erection of protective fencing), the proposed area of driveway, denoted by red honeycomb hatch on the Tree Protection Plan, shall be constructed to the specification detailed below and in accordance with the recommendations of Section 7.4 in BS 5837.

3.6.2 The proposed section of driveway shall be clearly marked out before any associated work starts. Existing vegetation may be removed with hand tools or sprayed with an approved non residual herbicide such as 'Glyphosate'.

3.6.3 Any small hollows may be filled with clean sharp sand (not builders' sand) to a maximum depth of 100mm. A permeable geotextile membrane (such as 'Terram') shall be laid down prior to the installation of a cellular confinement system.

3.6.4 The ground shall be covered with a perforated cellular confinement system such as 'Geoweb' or 'Cellweb' with a minimum cell depth of 150mm, and backfilled with clean, angular, no-fines aggregate (20mm-40mm). Edge supports of appropriate size and strength should be set above ground level and should be secured either with steel pins driven into the ground, or with concrete haunching laid on existing ground level on an impermeable polythene membrane. The outer edge of the supports may be banked up with clean topsoil.

3.6.5 A permeable geotextile membrane will also be laid on top of the cellular confinement sub-base to prevent fines and other debris filling the air spaces in the aggregate. The wearing course shall be of a permeable and gas porous nature such as porous tarmac or concrete setts with sand jointing.

3.7. Excavation within Root Protection Areas (RPAs).

3.7.1 Within the RPAs of trees T39, T40 and section are required to be excavated to enable construction of Plot 2 and a garage for Plot3.

- 3.7.2 Accordingly, the first 750mm depth of these sections of the foundations, as denoted by continuous, bold, orange lines on the TPP, shall be excavated using hand tools and/or an airspade only, under direct on-site arboricultural supervision.
- 3.7.3 All roots exposed during the excavations shall be cleanly severed by the arboricultural consultant, using secateurs or a sharp saw. The faces of the excavations nearest to the trees will be covered with hessian and kept damp at all times.
- 3.7.4 Any roots found with a diameter of less than 25mm shall be cleanly severed by the arboricultural consultant. If any roots of 25mm diameter and above are found, they shall initially be covered and protected by damp hessian. The arboricultural consultant shall then decide if it is necessary to retain them. If not, then shall be cleanly severed. If removal of such roots is not possible or feasible then the arboricultural consultant will liaise with the Council's tree officer to determine the best course of action.
- 3.7.5 If excavations below 750mm depth are required within RPAs, this may be undertaken by machine, provided that this is carried out under direct on-site arboricultural supervision and the machinery is based either outside the RPAs of retained trees or on suitable ground protection, and there is adequate clearance from the crowns of retained trees.
- 3.8. Underground services.
- 3.8.1 Detailed drawings of proposed underground services have not been produced at this stage of the planning application thus it is not possible to identify any potential impacts between trees shown retained on the TPP and proposed services.
- 3.8.2 At the detailed design stage and subject to planning consent, proposed underground services will be either located outside the RPAs of trees shown retained or will utilise existing service routes.
- 3.8.3 Where existing services within RPAs require upgrading, care shall be taken to minimise disturbance and where practicable, trenchless techniques employed; only as a last resort should open excavations be considered. Where existing services within RPAs are deemed not satisfactory for any further use they should be left in situ rather than being excavated/removed.
- 3.8.4 In the event that incursions into RPAs are unavoidable any new installation will comply with the methods and guidelines detailed in; 'Guidelines for the Planning, Installation, and Maintenance of Utility Services in Proximity to Trees' NJUG 10 (April 1995).
- 3.8.5 The locations of proposed service routes will be approved by the arboricultural consultant and shown on a revised Tree Protection Plan.

3.9. Landscaping.

3.9.1 Prior to the commencement of any landscaping works within the protected area behind the protective fencing the developer shall arrange a pre-start meeting with the site manager, the arboricultural consultant and the landscape contractor. The details of this method statement shall be discussed in relation to the proposed landscape operations and a clear sequence of operations established.

3.9.2 Within the RPAs the following principles will be maintained:

- Existing ground levels shall not be substantially altered.
- No plant or vehicles shall enter the RPA.
- No fuels or chemicals shall be stored within any of these areas.
- Any excavation required for fence posts, log retaining walls or any other landscape structures shall be undertaken by hand under direct arboricultural supervision. If roots are encountered then the position of the excavation shall be moved to a new location. If this is not possible then any roots with a diameter less than 25mm may be cut cleanly by hand. Any exposed roots shall be re-covered within 24hrs of excavation.
- No structure shall be fastened in any way to the trunks of the retained trees.
- No drainage or irrigation pipes shall be installed within the RPAs of the retained trees.
- Any unwanted vegetation shall be removed by hand.

3.10. Supervision & Monitoring.

3.10.1 From the start of the construction process the arboricultural consultant shall regularly visit the site to inspect the tree protection measures. If these measures comply with the specification detailed in this method statement a statement of compliance shall be sent to contractor/developer and copied to the LPA.

3.10.2 The arboricultural consultant shall then visit the site on a regular basis, as agreed with the local planning authority at the pre-start meeting (Section 3.2 above), or when specifically required as per the Table 2 below, to ensure that tree protection measures are kept in place and functioning as designed. Regular contact will be maintained with the site manager to determine any forthcoming operations that may make an impact on these tree protection measures and if arboricultural supervision is required. A record of these monitoring visits will be kept and copies sent to the developer and the LPA.

3.10.3 The site manager shall give 48 hours' notice to the arboricultural consultant of any operations, i.e. installation of underground services, construction of hard surfacing etc., which may make an impact on the RPAs of the retained trees.

- 3.10.4 Any alterations or variations in drawings for the site that are in, or within, the RPAs of the retained trees shall be referred in the first instance to the arboricultural consultant for his advice. If these changes make any kind of impact on the retained trees the arboricultural consultant shall suggest changes that will either avoid damage to the retained trees or offer solutions to mitigate the impact. Following this consultation, the arboricultural consultant shall issue revised Tree Protection Plans that reflect the changes.
- 3.10.5 Where any operations carried out by the developer deviate substantially from this method statement, a meeting will be convened between the developer, the arboricultural consultant and the site manager to determine the best method to mitigate any damage that may have occurred.

Visit no.	Timing of visit	Function carried out
1	Prior to the start of any construction works.	Site pre-start meeting.
2	Following tree felling and pruning works, erection of Protective Fencing and installation of Ground Protection.	To check tree works have been carried out to the required specification and that the Protective Fencing and Ground Protection have been installed in the correct location and to the correct standard.
3	Every four weeks during construction phase.	To check the Protective Fencing & Ground Protection is in place and that activities which would be harmful to trees are not being carried out.
4	During the excavation of the section of the foundations for Plot 2 within the RPAs of T39-T42 & section of footings for the garage to Plot 4 within the RPA of T45.	To supervise manual excavation to a depth of 750mm and to ensure there is no over-dig into RPAs.
5	At any other time which is sensitive in arboricultural terms.	To ensure retained trees are protected from development activities.

Table 2 - Timings of Supervision and Monitoring Visits.

Abi St. Aubyn MICFor, MArbor A, DipARB(RFS), MEng(Hons)

David Archer Associates

May 2017



APPENDIX 1

Tree Schedule

Explanatory Notes for the Tree Schedule

Site: 10 Jackets Lane, Northwood HA6 2SH.

This schedule is based inspections carried out by Abi St. Aubyn on Wednesday the 22nd July 2015 and Tuesday the 11th August 2015. Weather conditions on the first occasion were overcast with intermittent rain and during the second occasion were clear, dry and bright. Deciduous trees were in leaf.

The information contained in this schedule reflects the conditions of those specimens at the time of inspection. They were inspected from the ground only; they were not climbed and no internal investigations were undertaken, thus no guarantee may be given as to their structural integrity.

As trees are dynamic organisms and subject to continual change no dimensions expressed in this schedule may be relied upon for development purposes for more than 24 months from the date of survey.

1. Tree no: - Expressed in sequential order starting from number 1.

2. Species: - The common name as expressed within "*A Field Guide to the Trees of Britain and Northern Europe*" Alan Mitchell (1978).

3. Height: - Given as an approximate measure with the aid of a 'Disto' laser range finder and expressed in metres.

4. Trunk diameter: - Measured at 1.5m above ground level and expressed in millimetres; where multiple stems are present they are measured individually and a cumulative total calculated in accordance with BS5837 (2012).

5. Radial Crown Spread: - Distance from the centre of the trunk to each cardinal point of the compass and expressed in metres.

6. Crown Clearance: - Distance from adjacent ground level to the lowest point of the crown and expressed in metres.

7. Crown Break: - Distance from ground adjacent ground level to the first significant branch and expressed in metres with branch orientation indicated where appropriate.

8. Life Stage:- young; semi mature; mature; mature; over mature.; veteran - surviving beyond the typical age range for the species.

9. Physiology: - Health, condition and function of the tree in comparison to a normal specimen of its species and age.

10. Structure:- the structural condition of the tree based on an assessment of any visible roots, trunk and crown, noting the presence of any defects or decay: Good - no significant visible structural defects with a form typical for the species; Moderate - a specimen with only minor defects that are easily remedied or of no long term significance; Poor - significant and irremediable physiological or structural defects that may lead to early or premature decline; Hazardous - significant structural defects of such a degree that there is a risk of imminent collapse or failure.

11. Estimated Years:- Estimate of remaining contribution expressed in years (<10yrs, 10-20yrs, 20-40 yrs, >40yrs)

12. Comments: - Notes relating to health and condition, structure and form, estimated life expectancy and importance within the local landscape.

13. Category: - A rating given to individual trees based on Table 1 in the British Standard, BS 5837 (2012) "*Trees in relation to design, demolition and construction - Recommendations*".

Category 'A' - Trees of high quality and value; in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).

Category 'B' - Trees of moderate quality and value; those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

Category 'C' - Trees of low quality and value; currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.

Category 'U' - Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboriculture management.

Tree no.	Species	Height	Trunk Diameter	Crown Spread	Crown Clearance	Crown Break	Age	Physiology	Structure	Life Expectancy	Comments	Category
1	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
2	Hawthorn	8m	105mm 150mm est 180mm est	N2m E2m SE4.5m S2.5m W2.5m	1.5m	0.5	Mature	Average	Indifferent	>40 yrs	Trunk leans 20 degrees to SE; ivy in crown; of moderate quality; of long-term potential; of low landscape value.	C (1)
3	Hawthorn	9.5m	200mm ivy 150mm ivy est	2.5m	1.5m	0	Mature	Average	Indifferent	>40 yrs	Ivy to upper crown; of moderate quality and of long-term potential; but of low landscape value.	C (1)
4	Japanese maple	2.5m	20mm	2.5m	0m	0	Semi-mature	Average	Moderate	>40 yrs	Ornamental small tree; of moderate quality; of long-term potential; of low landscape value.	C (1)
5	Ash	13m	380mm 200mm	N7m E5m S5m W5m	3m	0.5	Semi-mature	Average	Indifferent	10-20 yrs	Off-site tree growing on W side of Lane; ivy to upper crown; of moderate quality and landscape value; of short-term potential only due to the pressure on the species by Ash Die Back (Chalara sp.).	C (12)
6	Hawthorn	4.5m	170mm	N1.5m E3.5m S1m W0.5m	1.5m	1.5 N	Mature	Below average	Poor	10-20 yrs	Die back in crown; die back in hedge; trunk leans 20 degrees to E; of low quality, of low landscape value; of short-term potential only.	C (123)
7	Silver birch	10m	250mm est	2.5m	-	-	Semi-mature	Average	Indifferent	>40 yrs	Off-site tree; growing adjacent to 1.5m brick wall which is likely to be a root barrier; of moderate quality; of long-term potential; of low landscape value.	C (1)
8	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
9	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
10	English oak	23m	1110mm	N9m E9m S8.5m W9m	1m	7.5 S	Mature	Average	Indifferent	>40 yrs	Of moderate quality and landscape value; of long-term potential.	B (12)
11	English oak	16.5m	840mm	N8m E9.5m S9.5m W9.5m	1m	5S	Mature	Average	Indifferent	>40 yrs	Pronounced buttresses; of moderate quality and landscape value; of long-term potential.	B (12)

Tree no.	Species	Height	Trunk Diameter	Crown Spread	Crown Clearance	Crown Break	Age	Physiology	Structure	Life Expectancy	Comments	Category
12	Hawthorn	7m	150mm	3m	1.5m	1 SW	Semi-mature	Average	Indifferent	>40 yrs	Off-site; small tree; of moderate quality; of long-term potential; of low landscape value.	C (1)
13	Silver birch	8m	170mm est	3m	1.5m		Young	Average	Indifferent	>40 yrs	Off-site; growing in hedge; of moderate quality; of long-term potential; of low landscape value.	C (1)
14	Holly	10m	190mm	3m	1m	2 N	Semi-mature	Low	Indifferent	20-40 yrs	Upper crown sparse; of low quality; of low landscape value; of medium-term potential.	C (123)
15	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
16	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
17	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
18	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
19	Ash	13m	350mm 350mm est 100mm est 120mm est	6m	0m	0	Mature	Low	Poor	10-20 yrs	Off-site tree; multi-stemmed from base; growing on top of bank on edge of field; not possible to inspect base due to barbed wire; of low quality; of high landscape value; of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (2)
20	Ash	13m	230mm	6m	6m	4.5 W	Semi-mature	Average	Indifferent	10-20 yrs	Growing on site adjacent to low level brick wall; high crown with small diameter dead wood (c.15mm); of moderate quality and landscape value; but of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (12)
21	Ash	13m	275mm	4m	1.5m	2 W	Semi-mature	Average	Indifferent	10-20 yrs	High crown; of moderate quality and landscape value; but of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (12)
22	Ash	6.5m	110mm	2m	1.5m	3	Young	Average	Indifferent	10-20 yrs	Of moderate quality but of low landscape value, and of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (1)
23	Ash	9m	110mm	2m	1.5m	3	Young	Average	Indifferent	10-20 yrs	Of moderate quality but of low landscape value, and of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (1)

Tree no.	Species	Height	Trunk Diameter	Crown Spread	Crown Clearance	Crown Break	Age	Physiology	Structure	Life Expectancy	Comments	Category
24	Hawthorn	6.5m	60mm est 60mm est 60mm est	3m	1m	0	Semi-mature	Average	Indifferent	>40 yrs	Of moderate quality and of long-term potential; but of low landscape value.	C (1)
25	Elm	8m	165mm	3.5m	1.5m	1.5 W	Young	Average	Indifferent	10-20 yrs	Of moderate quality but of low landscape value, and of short-term potential only.	C (1)
26-30	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
31	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
32	Unidentifiable	5m	-	-	-	-	Young	Dead	Poor	<10 yrs	Of low quality, of low landscape value, and of little potential.	U
33	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
34	Ash	13m	200mm	N0m E3.5m S3.5m W0m	5m	3	Semi-mature	Below average	Poor	10-20 yrs	Off-site tree; biased crown covered in dense ivy to 5m; of low quality, of low landscape value; of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (123)
35	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
36	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
37	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
38	Myrobalan plum	5m	150mm 180mm est 50mm est	2.5m	0.5m	1	Mature	Average	Indifferent	>40 yrs	Of moderate quality and of long-term potential; but of low landscape value.	C (1)
39	Hawthorn	8m	170mm	2m	2.5m	1.5 W	Mature	Average	Poor	20-40 yrs	Off-site; cavity at 1.5m on N side; of low quality, of low landscape value, but of medium-term potential.	C (123)
40	Holly	5m	120mm	1m	1.5m	1.5	Semi-mature	Average	Poor	>40 yrs	Off-site tree; of low quality, of low landscape value, but of long-term potential.	C (123)
41	Holly	5m	120mm 70mm 150mm	1m	1.5m	0.5	Semi-mature	Average	Poor	>40 yrs	Off-site tree; of low quality, of low landscape value, but of long-term potential.	C (123)

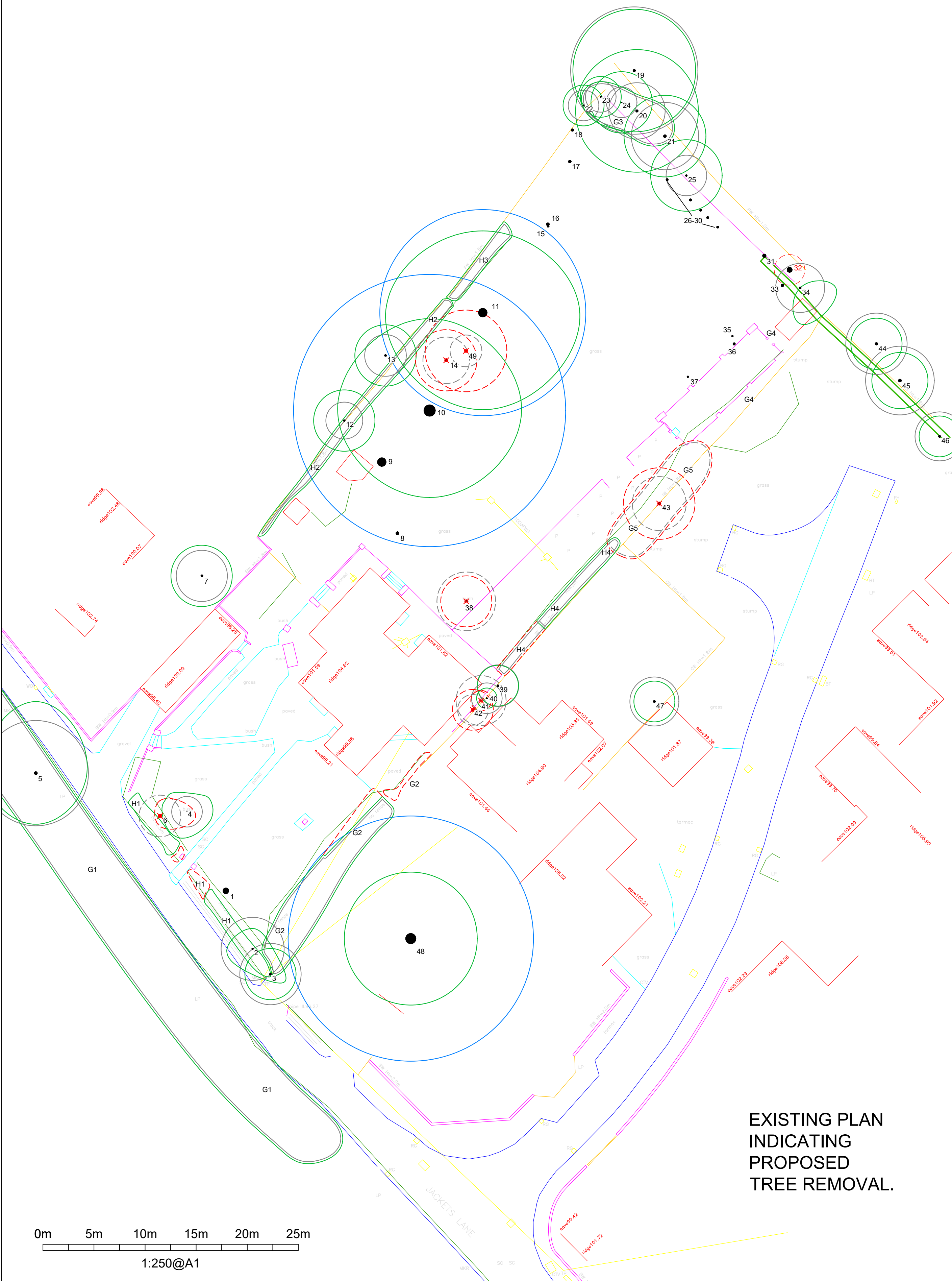
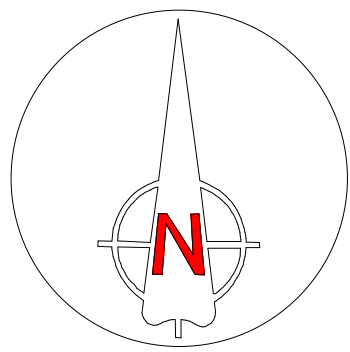
Tree no.	Species	Height	Trunk Diameter	Crown Spread	Crown Clearance	Crown Break	Age	Physiology	Structure	Life Expectancy	Comments	Category
42	Ash	9.5m	120mm	2m	3m	4	Young	Average	Poor	10-20 yrs	Off-site tree; suppressed by adjacent buildings; of low quality, of low landscape value, and of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (123)
43	Beech	9m	220mm	3.5m	1.5m	1.5	Semi-mature	Average	Indifferent	>40 yrs	Growing within G5; of moderate quality; of long-term potential; of low landscape value.	C (1)
44	Pear	5.5m	250mm	2.5m	2m	-	Over-mature	Below average	Moderate	10-20 yrs	Off-site tree; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
45	Ash	7m	280mm	2.75m	1m	-	Semi-mature	Average	Poor	10-20 yrs	Topped; of low quality, of low landscape value, and of short-term potential only due to the pressure on the species by Ash Die Back (<i>Chalara sp.</i>).	C (123)
46	Lawson cypress	8.5m	200mm	2m	0.5m	1	Semi-mature	Average	Indifferent	>40 yrs	Off-site tree; of moderate quality and of long-term potential; but of low landscape value.	C (1)
47	Apple	5m	200mm	2m	2.5m		Mature	Average	Indifferent	10-20 yrs	Off-site tree; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
48	Sweet chestnut	17m	1000mm	6.5m	4m	4	Mature	Average	Moderate	<10 yrs	Off-site tree; of moderate quality and landscape value; but of little potential.	B (12)
49	Yew	5m	130mm	4m	1m	2	Young	Average	Indifferent	>40 yrs	Small tree; of moderate quality; of long-term potential; of low landscape value.	C (1)
G1	Species include Norway maple, English elm, Hazel and Flowering cherry	5m to 10m	<10mm	3m	3m	-	Various	Average	Indifferent	>40 yrs	Off-site group of trees; of moderate quality and landscape value; of long-term potential.	C (12)
G2	Species include Rhododendron, Holly, Lilac and Laurel	3m to 6m	Min 60mm to Max 150mm	4m	0m	-	Mature	Average	Moderate	20-40 yrs	Of moderate quality and of medium-term potential; but of low landscape value.	C (1)
G3	Caucasian elm	Up to 6.5m	Av. 60mm	2m	0m	-	Young	Average	Indifferent	10-20 yrs	Of moderate quality but of low landscape value, and of short-term potential only.	C (1)

Tree no.	Species	Height	Trunk Diameter	Crown Spread	Crown Clearance	Crown Break	Age	Physiology	Structure	Life Expectancy	Comments	Category
G4	-	-	-	-	-	-	-	-	-	-	Recently removed.	-
G5	Beech	Up to 9m	<100mm	2m	1.5m	1.5	Young	Average	Indifferent	>40 yrs	Of moderate quality and of long-term potential; but of low landscape value.	C (1)
H1	Copper beech	Up to 2m	<50mm	0.5m	0m	0	Semi-mature	Average	Moderate	>40 yrs	Ornamental hedge in regular management; of moderate quality and of long-term potential; but of low landscape value.	C (1)
H2	Species include Cotoneaster, Flowering cherry and Field maple	2m-4m	<20mm	2m	0m	0	Various	Average	Indifferent	>40 yrs	Low level hedge; of moderate quality and of long-term potential; but of low landscape value.	C (1)
H3	Leyland cypress	Up to 3m	<25mm	1m	0m	0	Young	Average	Moderate	>40 yrs	Low level ornamental hedge; of moderate quality and of long-term potential; but of low landscape value.	C (1)
H4	Species include Privet, Elder and Beech	Up to 4m	<60mm	1m	0m	-	Semi-mature	Average	Indifferent	>40 yrs	Low level screening; of moderate quality and of long-term potential; but of low landscape value.	C (1)

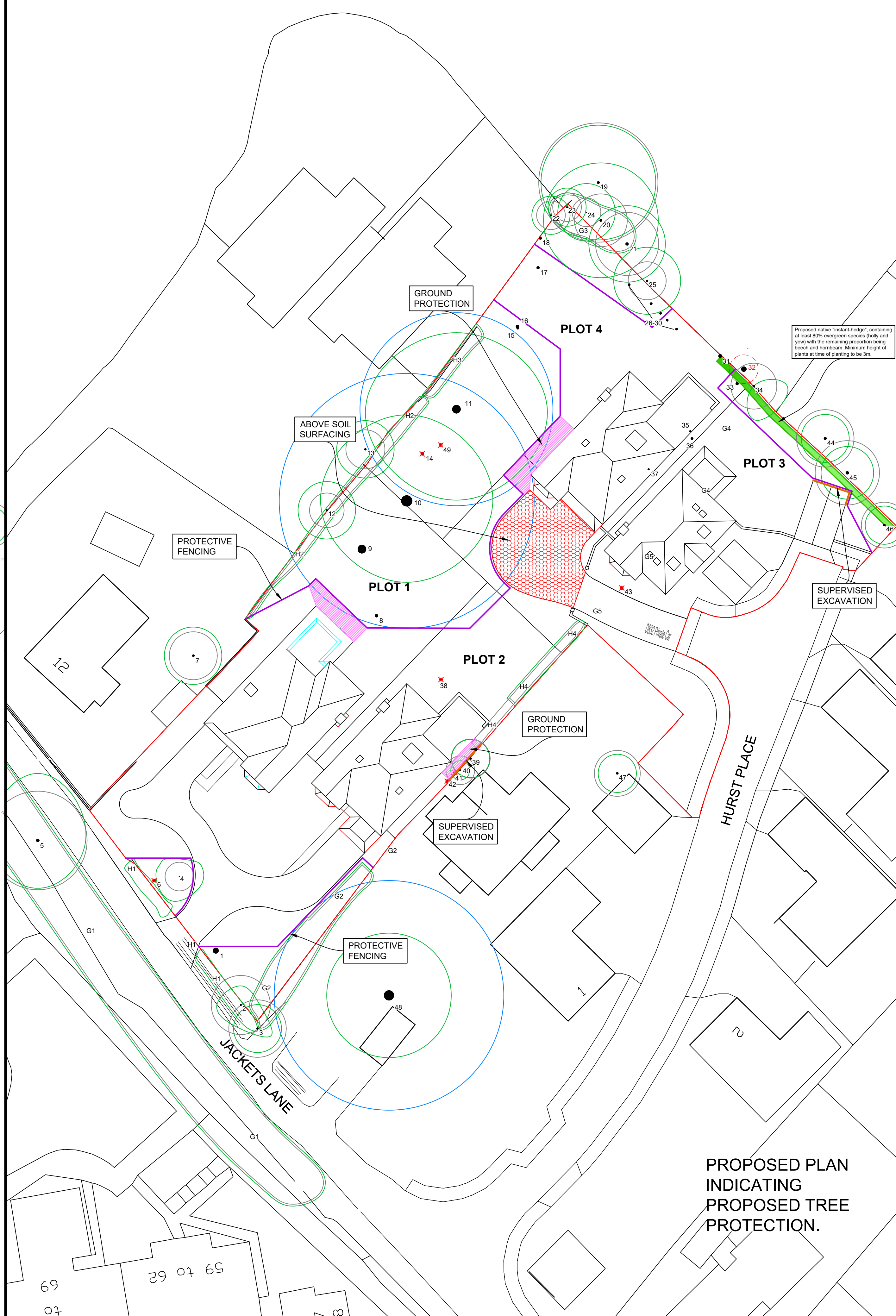


APPENDIX 2

Tree Protection Plan



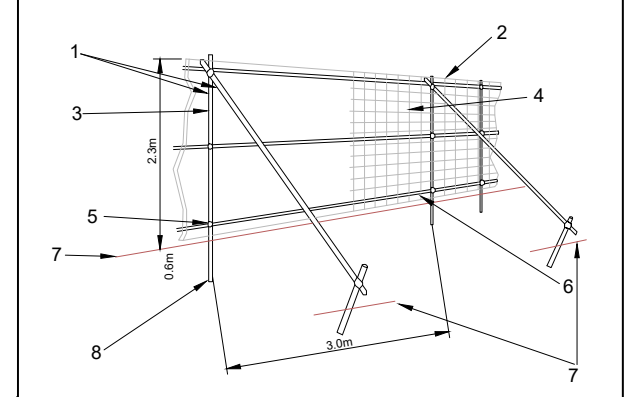
EXISTING PLAN
INDICATING
PROPOSED
TREE REMOVAL.



PROPOSED PLAN
INDICATING
PROPOSED TREE
PROTECTION.

PROTECTIVE FENCING

To be erected prior to the commencement of all works on site, and retained in place throughout construction. To comprise either 2.4m wooden site hoarding; or a 2.3m high scaffolding framework comprising of vertical and horizontal framework, well braced to resist impacts, with uprights to be spaced at a maximum of 3.0m intervals and driven into the ground by a minimum of 600mm. On to this, standard anti-climb welded mesh panels are to be securely fixed to each other with at least two scaffold clamps and to the scaffold framework with wire. Standard anti-climb welded mesh panels on rubber or concrete feet are not resistant to impact and should not be used. All weather notices should be erected at regular intervals on the weld mesh panels with words such as "Construction exclusion zone - Keep out".



BS 5837: 2012 Figure 2 - Protective barrier

GROUND PROTECTION

To be installed prior to any demolition or construction works. If for pedestrian traffic then wooden boards or scaffold boards laid over a compressible layer such as 75mm of woodchip; the whole underlain by a bi-axial geogrid such as 'Tensar' or it's equivalent. If for vehicular traffic then a temporary roadway should be used which has been designed by a structural engineer to cope with anticipated loading. A proprietary system such as 'Trackway' or 'Ground-Boards' may be appropriate. All should be laid above a compressible layer, such as woodchip, of sufficient depth to dissipate any loading and a bi-axial geogrid such as 'Tensar' or it's equivalent.

SUPERVISED EXCAVATION

Within the areas indicated the first 750mm of soil should be removed by the use of hand tools or an air pick. This shall be done whether for foundations, hard surfacing, underground services or removal of existing foundations of buildings and walls. Any root found will be cleanly severed by the arboricultural supervisor and the exposed cut ends kept covered by damp Hessian. Any excavation required deeper than 750mm may be undertaken by machine provided it is situated outside the Root Protection Area.

ABOVE SOIL SURFACING

Hard surfacing shall be constructed using an above soil surface design in accordance with guidance set out in Section 7 of BS 5837: 2012 *Trees in relation to design, demolition and construction - Recommendations*. There shall be no lowering of existing soil levels or severance of any tree roots.

DAVID ARCHER ASSOCIATES
ARBORICULTURAL CONSULTANCY

Project:
10 Jackets Lane,
Northwood
HA6 2SH.

Client:
Shanly Homes

Drawing:
TREE PROTECTION PLAN

Based on:
Proposed Site Plan 1300/PLN/401 A

Drawing No:
TPP 04

Rev: ----

Date:
May 2017

Scale:
1:250 @ A1

Drawn:
MR

Tree nos.
1

Canopies of trees:
1

Trees to be removed:
1

Category 'U' tree:
32

Category 'B' RPA:
1

Category 'C' RPA:
1

Protective fencing:
1

Ground protection:
1

Supervised excavation:
1

Above soil surfacing:
1

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