



Viking Tree Services Contracting and Consultancy
Limited

Arboricultural Impact Assessment

Former Sandgate Nurseries

West End Road

Henfield

Sussex

On behalf of:

Sandgate Henfield Developments Ltd

Oak Green House

250-256 High Street

Dorking

RH4 1QT

Report reference:

VTs-1079-1001-2023

REV D

An arboricultural survey has been carried out to support an outline planning application for a residential development at the former Sandgate Nurseries, Henfield.

This report provides information in compliance with the *British standard 5837:2012 Trees in relation to design, demolition and construction* and considers the impact of the proposed development on the local area and the site in particular from the point of view of trees.

This report is intended to allow the local authority to access the information required in relation to this planning application.

Arboricultural advice has been given to the designers of the layout of the development in order to shape it to the maximum benefit to trees and woodland.

This layout is the product of a number of considerable revisions from the original and each incarnation has retained more and more trees. It is impossible however to reduce the impact of such a development to zero and there will be tree loss on this site.

The majority of the impact is in the removal of low value trees in the centre of the site and along the eastern margin. These trees are mostly scrub that has grown up since the nursery stopped being used commercially. The large mature trees on the western and southern side are being retained with enhanced landscapes planted around them.

The proposed layout has been designed to incorporate the trees on the site and in conjunction with designed landscape trees are at the heart of this development.

This report recommends that an arboricultural method statement in accordance with table 1 of BS:5837. This method statement will give guidance on how to implement the layout whilst protecting the retained trees and root protection areas. This report should cover tree protection fencing and ground protection where necessary.

If the contents of this and the subsequent reports are implemented this development should be achievable in arboricultural terms and be acceptable to the local planning authority, LPA.

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1.0 Introduction

1.1 Purpose of this report

- 1.1.1 This report's purpose is to outline the impact of the proposed layout on the trees on this site and present it to the LPA so they can make an assessment on the viability of this development. Its purpose is also to guide the design of the layout and aid other professions where appropriate.
- 1.1.2 It is to assess the quantity and quality of the trees on site and to grade them as per the BS:5837 guidance.
- 1.1.3 It is only concerned with arboricultural matters however other disciplines such as ecology and engineering may be mentioned if appropriate.

1.2 The proposal

1.3 *Outline application for erection of a continuing care retirement community of up to 72 units of accommodation (Use Class C2) and up to 10 starter homes (Use Class C3) with associated community facilities including medical centre and on-site laundry and catering facilities, with access, infrastructure, open space, landscaping and associated works (all matters reserved except for access). Background and design input*

- 1.3.1 An initial BS:5837 survey was carried out in September of 2022 in order to assess the location and categories of the trees on site.

1.4 Planning Context

- 1.4.1 There are no tree preservation orders on the site.
- 1.4.2 The site is not covered by a conservation area or a site of special scientific interest (SSSI).
- 1.4.3 BS 5837 does not make a distinction between trees subject to statutory protection, such as a TPO, and those trees without. This is principally because all trees are a material consideration and full planning consent overrides any TPO protection. Therefore, we do not seek to offer any comparison between, or imply any difference in the quality or importance of trees covered by a TPO and other trees.

1.5 Glossary

- 1.5.1 Technical jargon has been avoided however a glossary is included in appendix 1.

2 Site description



Site red line drawing.

2.1 The site is located to the west of the village of Henfield in West Sussex.

2.2

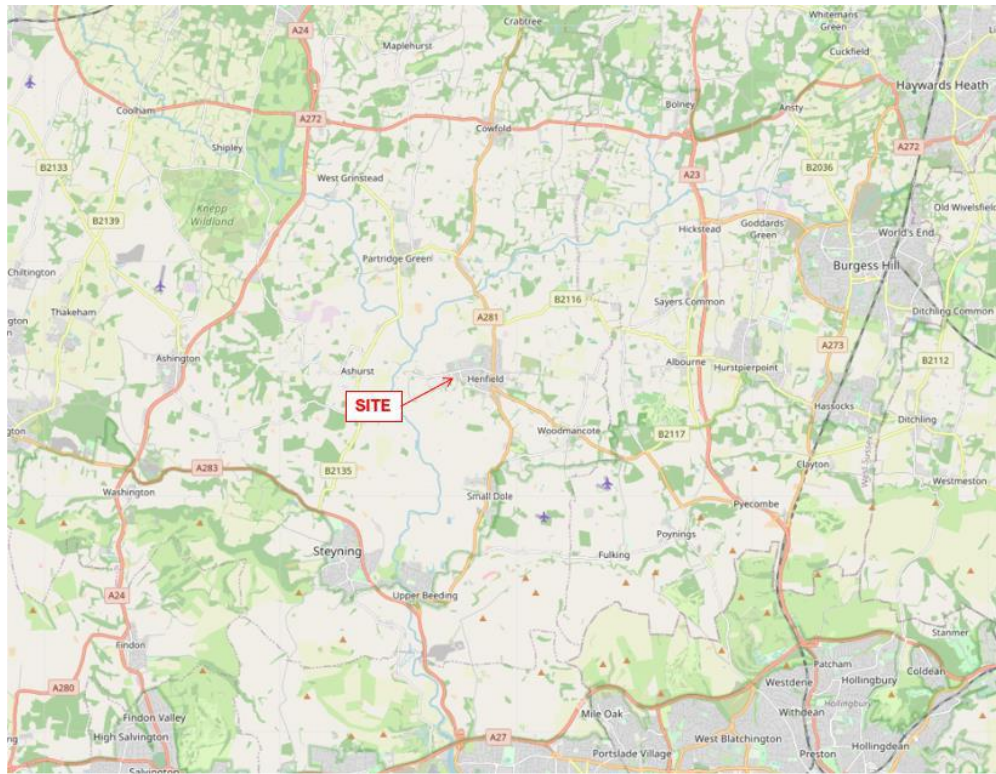


Figure 1 Wider site location

2.2.1 The site is surrounded primarily by residential properties to the east and west with West End Lane to the north and Hollands Lane to the south. The area is almost wholly residential with the exception of some commercial buildings off of Hollands Lane.



2.2.2

Figure 2 Google earth image of site.

2.3 Historically the site has been used as a commercial nursery. Remnants of the greenhouses and hard standing can be seen on site. The nursery opened in the 1970's ceased operation around 2006.

2.4 Soils

2.4.1 The soil type is a mixture of clay, silt, sand and gravel. It sits on top of a sandstone formation.
(Report reference 22-200.01 Aviron associates limited.)

2.5 Trees in the local landscape and landscape character

2.6 The surrounding landscape is a mixture of residential properties and paddocks with trees around the margin on the western side.

2.7 Subject Trees

2.7.1 There are 26 individual trees and 9 groups. These groups make up the overwhelming volume of the trees on site.

2.7.2 There is one category A tree.

- 2.7.3 There are 11 category B trees and 2 category B groups.
- 2.7.4 There are 12 category C trees and 6 category C groups.
- 2.7.5 There are 2 category U trees.
- 2.7.6 There is a large variety of species on site both deciduous and non-deciduous. There is also a range of ages from saplings to over mature trees and native and non-native trees.
- 2.7.7 The greatest percentage of trees on site are willow and hazel. The remainder are predominantly ash, oak, Elm and Field Maple.

2.8 Assessment of tree constraints

- 2.8.1 A tree constraints plan has been produced during the layout design process. This takes into account two areas of constraint, above and below ground.
- 2.8.2 Below ground constraints concern the impact of the development on root protection areas (RPA).
- 2.8.3 Above ground constraints assess the impact on the location of trees as well as the impact on canopies and shading of potential properties.
- 2.8.4 In this report arboricultural constraints and impact have been assessed and reported on together. The layout presented has come into existence through a collaborative multi-disciplinary process.



Figure 1 Eastern boundary trees.



Figure 2 G9, Willow group



Figure 3 Mature oak along western boundary mixed with willow and hazel groups.



Figure 4 G5, willow and elm mix.



Figure 5 Northern entrance with hedge and trees along the neighbour's boundary.

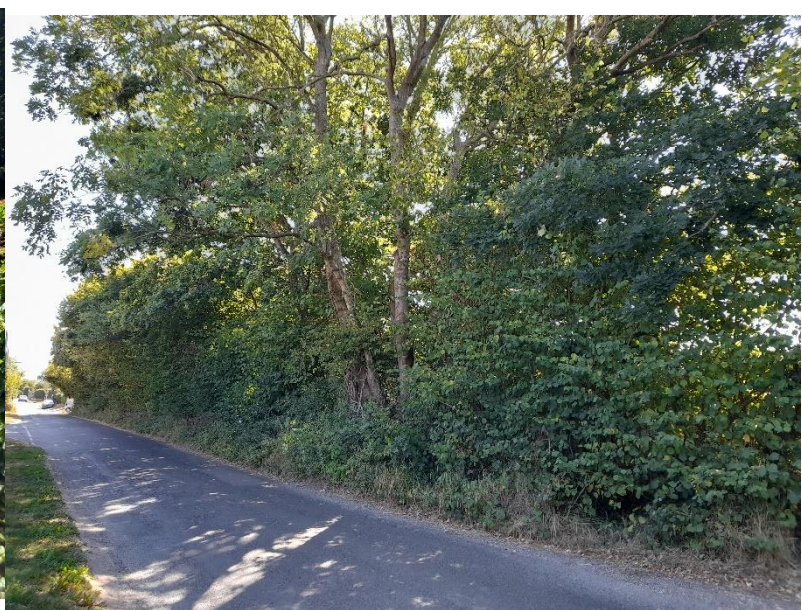


Figure 6 G8 and T21-T26

3 Arboricultural Impact Assessment

BS 5837 category tree number and species	Reason for removal	Impact	Total
A (High quality)			0
none			
B (Moderate quality)			3
G2 (partial)	Access road, footway and attenuation basins	Low level of ecological impact.	
G3 (partial)	Access road, footway and attenuation basins	Visual impact on properties on opposite side of road. Low level of ecological impact	
C (Lowest quality)			12
T23 Ash	Parking bays	Visual impact on properties on opposite side of road. Low level of ecological impact.	
T24 Elm	Parking bays	Visual impact on properties on opposite side of road. Low level of ecological impact.	
T9 Willow	Parking bays	Low level ecological impact. Very little landscape impact	
T10 Willow	Roads and homes	Low level ecological impact. Very little landscape impact	
T11 Willow	Roads and Homes	Low level ecological impact. Very little landscape impact	
G6	Roads and Homes	Low level ecological impact. Very little landscape impact	
G9	Roads and Homes	Low level ecological impact. Very little landscape impact	
G7	Roads and Homes	Low level ecological impact. Very little landscape impact	
G5	Roads and Homes	Low level ecological impact. Very little landscape impact	
G4 Partial	Roads and Homes	Low level ecological impact. Very little landscape impact	
G8 Partial	Access road	Visual impact on properties on opposite side of road. Low level of ecological impact .	
U dead or dangerous			
T3	Partially collapsed oak. The remainder is unstable and needs to be felled	This tree will leave a gap in the boundary and should be replaced with a good quality Oak standard with native whips around it to continue the managed margin.	1

T12	Partially collapsed ash on boundary		
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3.1 Trees to be removed.

3.1.1 In order to facilitate this development a number of tree of low value will have to be removed however the larger and far more valuable trees have been retained.

3.1.2 Since the nursery ceased trading approximately 16 years ago a large number of self-seeded trees have taken over previously open ground. These are predominantly willow, hawthorn and blackthorn of a low quality scrub variety. These trees are what largely make up groups G4,5,6,7,8 and 9. In order to achieve the quantum of buildings desired it is not possible to retain these trees..

3.1.3 Two category B groups are affected, G2 and G3. These groups comprised of hazel coppice with ash and oak standards along the margin with more willow, hawthorn and blackthorn mix further into the site. In order to facilitate the access road and footpath the willow, hawthorn and blackthorn will have to be cut back. I also recommend that the hazel coppice be put into a management plan so that it is coppiced on rotation to preserve it.

3.1.4 The removal of these trees will have a short term impact on the residential properties to the east however the generous planting scheme proposed will more than offset this once established and as previously mentioned the site was a commercial nursery for most of the lifetime of those houses.

3.1.5 Two category U trees have been scheduled for removal. These have both partially failed and present an unacceptable risk either to the public or to adjacent landowner. In the case of T3 I have recommended that a good quality standard surrounded by whips be planted to replace it. This is both to maintain the coppice standard mix that makes up the margin but also to ensure that a wildlife corridor is not interrupted along the western boundary.

3.1.6 The current proposal shows attenuation basins however at this stage their location is indicative and not fixed therefore it will be necessary to amend this report once their final location is

determined to see how it will affect the remaining trees.

3.1.7 Part of G7 will need to be removed in order to facilitate the development however the remainder is to be incorporated into the POS and enhanced with more planting.

3.1.8 The loss of these trees will be offset with both on and off-site planting of native trees.

3.2 Trees requiring tree surgery works.

Trees requiring tree surgery works	Works
Category A	
none	
Category B	
None	
Category C	
None	

3.2.1 Tree surgery works should be carried out to BS:3998 standards or to best industry practice.

3.2.2 In some cases, it may be desirable to leave arboricultural arisings on site to create habitat. Ecological advice should be sought on this to maximise potential.

3.3 Root protection area incursions

3.3.1 Compaction of compressible soils is probably the single most common cause of death or damage to retained trees on development sites. Soil compaction reduces soil pore space, which in turn reduces soil air, the passage of water and available nutrients. These anaerobic conditions prevent root growth and the proliferation of soil microbes essential to tree health. Symptoms in trees will include crown die-back, sparse, and small foliage, poor extension growth etc., however these may not be evident until well after the occurrence of compaction. Even one pass of a vehicle in wet conditions can cause irreparable soil compaction.

3.3.2 As mentioned the most likely aspect of the proposal to affect the RPAs of trees are the attenuation basins however until there location and design are finalised it is not possible to say to what extent and what mitigation would be suitable.

3.3.3 Elsewhere on site incursions to the root zones are large avoided although where they are again this will be mitigated in the arboricultural method statement.

3.4 Elevations and ground levels

3.4.1 During design, consideration should be given to changes in ground levels. This should be dealt with in the detailed AMS; however, it is important at the planning stage to recognise any significant changes. Even where this occurs outside the RPA of a retained tree it still has the ability to impact on the tree and methods of dealing with the change in levels such as retaining walls, slopes etc. should be achievable without incursion into the RPA.

3.5 Impact on local amenity and landscape

3.5.1 The trees to be removed are of a mixture of ages, sizes and species with the loss of some larger mature trees which is regrettable. However, the balance that has been struck whereby the large native trees and coppice have been retained intact and enhanced at the expense of low grade trees internally is the right one.

3.5.2 The planting and management plan to go alongside the arboricultural works onsite should offset and indeed enhance the amenity value of the site by greatly increasing biodiversity.

Arboricultural method statement heads of terms.

Table B.1 Delivery of tree-related information into the planning system		
Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions)	Existing and proposed finished levels
	Tree retention/removal plan (finalized)	Tree protection plan
	Retained trees and RPAs shown on proposed layout	Arboricultural method statement – heads of terms
	Strategic hard and soft landscape design, including species and location of new tree planting	Details for all special engineering within the RPA and other relevant construction details
Reserved matters/ planning conditions	Arboricultural impact assessment	
	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method	Arboricultural site monitoring schedule
	Dimensioned tree protection plan	Tree and landscape management plan
	Arboricultural method statement – detailed	Post-construction remedial works
	Schedule of works to retained trees, e.g. access facilitation pruning	Landscape maintenance schedule
	Detailed hard and soft landscape design	

3.6

- 3.7** An arboricultural method statement (AMS) describes how operations which may affect trees will be carried out to minimise any adverse effect on them. Details of site management, detailed construction methods, materials etc. can only be finalised once the post-consent detailed design

begins. For that reason, at this stage in the process, only a list of heads of terms summary is given and this will need more detailed consideration once consent is issued. This is as recommended in Table B1 of BS 5837 (reproduced courtesy of BSI below).

3.7.1 Below is a list of heads of terms for a future arboricultural method statement.

Heads of terms	Outline of appropriate protective measures. Greater detail post-consent will be required in response to a planning condition
Areas to be protected	The draft tree protection plan shows all areas where protective measures are required. Tree protection is shown as barriers and/or ground protection defining the Tree Protection Zone (TPZ)¹. Where necessary, areas outside the TPZ but still within the RPA are indicated. Any works within these areas will require arboricultural supervision and likely to require specialist techniques.
Tree works	Trees identified for removal, either because of the proposal or as a result of our survey, are identified with a red outline. Where within the RPA of a tree to be retained, these trees are not to be removed with the use of an excavator but by such means as section felling and hand digging or using stump grinding machinery. Tree pruning and tree removal close to trees to be retained must be carried out by bona fide tree surgeons undertaken in accordance with <i>BS 3998:2010 Recommendations for tree works</i>, or industry best practice.
Protective barriers	Tree protection barriers must be fit for the purpose of excluding site personnel and machinery. The default specification detailed within Section 6 of BS 5837 is to be used unless a different specification has been agreed with the LPA.
Ground protection	Where the full extent of the RPA cannot be protected with barriers alone, ground protection is to be used (see Appendix 4). This could, for example, be for access by pedestrians or machinery across RPAs and ground protection will be fit for the purpose of preventing compaction of the soil structure and damage to roots.
Site set-up, clearance, grading of soil and changes in ground levels	Tree protection MUST be in place before site set-up or clearance is undertaken. If necessary, localised vegetation clearance to install the protection is to be undertaken using hand tools only (including chainsaws, Rushcutters etc.) but without the use of tracked or wheeled plant and machinery.

	Where site hoarding, signs etc. are within RPAs, it will be necessary to show that account has been taken of retained trees in respect to positioning and installation methodology, such as avoiding important roots and lining post holes to avoid the caustic effect of wet concrete on tree roots.
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Other information required within a detailed AMS	
Order of work	It is not the project arboriculturist's role to determine the timing and implementation of works on site, however, an input into the process can avoid issues once work is underway.
Responsibility and site management	It is the responsibility of the main contractor or assigned agent to ensure that details regarding tree protection are understood and followed by all site personnel and should be incorporated into site inductions.
Contacts	Contact details of: ☐ Site manager or another person on site responsible for ensuring tree protection is complied with. ☐ The LPA tree officer and/or case officer. ☐ The project arboriculturist. ☐ Any other relevant party.
Auditable system of arboricultural site monitoring and supervision	A project arboriculturist shall be appointed to advise on tree protection and to attend an initial pre-commencement site meeting before works start and regular site visits to monitor compliance with tree protection and/or to supervise works which could affect trees. The frequency of such visits will be determined during the detailed design stage and will be guided by the LPA and the likely risk to trees (at least fortnightly during the construction phase is recommended). Site monitoring/supervision reports should be issued as an audit trail for the client and LPA.
Contractor areas/site facilities	The location of site facilities, areas for loading, unloading, and storage of materials and plant, temporary services, car parking etc. must be sited to ensure minimal impact on retained trees. No discharge of potential contaminants should occur within 10m of a retained tree, or where there is a risk of run-off into an RPA.
Movement of plant and machinery	Haul routes and other means of movement of plant and machinery around the site.
Post construction damage and amelioration	How post-construction damage such as compaction will be ameliorated.

4 Conclusion

- 4.1** Whilst a number of trees are being lost from this site they are almost all scrubby self-seeded trees from the interior of the site whilst the mature native trees along the western and southern boundary have been retained and will be further enhanced by a rigorous planting scheme.
- 4.2** This incarnation of the layout retains by far the greatest number of trees and in particular those of the highest value from an ecological, arboricultural landscape perspective.
- 4.3** There has been considerable effort put into the planting and woodland management scheme for this site both as an attempt to offset the loss of trees but also to offer back to the community and landscape an improved woodland with a much greater variety of tree species, in particular natives, and a greater variety of vertebrate and invertebrate wildlife.
- 4.4** The correct execution of the proposed works will be critical in achieving the aim of having minimal impact on the retained trees. A detailed arboricultural method statement produced post planning consent, along with a thorough understanding of the issues by the main contractor and monitoring by the project arboriculturist, will enable the development to be achieved and the trees to continue contributing into the future.

5 Recommendations

- 6.1** That a detailed arboricultural method statement is produced with the design team to ensure all works proposed within root protection areas can be achieved with minimum impact on retained trees.
- 6.2** During construction, the arboricultural method statement should be followed by all site personnel and supervised at key stages by the project arboriculturist. A copy of it and associated plans should be kept on site and be part of the site induction where applicable. Supervision/monitoring reports to be issued after each inspection as a record of compliance and audit trail for the local authority.
- 6.3** The routes of proposed services should be assessed by the project arboriculturist and be part of the detailed arboricultural method statement produced in conjunction with the services engineer and contractor if services are to be routed within root protection areas.
- 6.4** Foundation design should take into account trees to be retained, trees to be removed and new trees to be planted.
- 6.5** Tree protection barriers and any ground protection must be in place before any works begin.
- 6.6** That the project arboriculturist reviews proposals for archaeological investigations, contaminated soil remediation or, to assess any impact on retained trees and if there is a conflict, advise on mutually acceptable solutions.

Table 5 - Key to survey sheets

Tree number	T: Tree G: Group – trees which form cohesive arboricultural features. W: Woodland H: Hedge – regularly maintained domestic hedges just species and height noted. – hedgerows and substantial internal hedges are specified in the tree schedule S: Shrub mass – just species and height noted
Age class	NP: Newly planted Y: Young - an establishing tree that could be easily transplanted. SM: Semi-mature - an established tree still to reach its ultimate height and spread a considerable growth potential. EM: Early mature - a tree reaching its ultimate height and whose growth is slowing, however, it will still increase considerably in stem diameter and crown spread. M: Mature - a tree with limited potential for further significant increase in size although likely to have a considerable safe useful life expectancy. LM: Late mature - a senescent tree, in decline, although may still have a useful life expectancy. V: Veteran – has features associated with advanced age for its species but not necessarily very old chronologically. A: Ancient - a tree older than typical for the species and of great ecological, cultural, or aesthetic value.
Dia.	The diameter of the stem in millimetres at 1.5m above ground level for single-stemmed trees or in accordance with Annex C of BS 5837 for multi-stemmed trees or trees with low forks or irregular stems. If trees were inaccessible for any reason the diameter is estimated. This is shown with an (e) after the entry.
Stems	Numbers of stems or M/S = multi-stemmed.

Ht.	Height in metres. Usually estimated. Approximately one in ten tree heights is measured with a clinometer for accuracy with other tree heights taken from the known heights.
Ult. ht.	Ultimate height likely to be achieved for this tree in this location. The suggested ultimate height of trees within this report is based on physiological and site conditions and may differ from industry tables. Its purpose is to inform shading, visual aspects, and post-development pressures and not necessarily foundation design.

Cr.ht. 1	The height of canopy above ground level.
Cr.ht. 2	Estimated. The height of canopy above ground level. Estimated.
NESW	Crown spread at the four cardinal points. Paced or measured where critical. If estimated, this is indicated with an (e) after the entry.
BS cat.	U: Unsuitable for retention. Existing condition is such that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. Note, category U trees can have existing or potential conservation value which it might be desirable to preserve. A: High quality and value (non-fiscal) with at least 40 years remaining life expectancy. B: Moderate quality and value with at least 20 years remaining life expectancy. C: Low quality and value with at least 10 years remaining life expectancy, or young trees with a stem diameter below 150 mm. A, B and C category trees are additionally graded into 1) Mainly arboricultural values; 2) Mainly landscape values; 3) Mainly cultural values including conservation.
Cond.	Physiological & structural condition. G = good; F = fair; P = poor; D = dead.
Life exp.	Estimated remaining useful contribution in years. This is not necessarily the ultimate life expectancy of the tree as trees can often exist in a collapsed, decayed form for many years, however, this may not be appropriate in the site context.
RPR	Root protection radius in metres based on stem diameter.
Preliminary recommendations	Preliminary recommendations for tree surgery found within the tree survey sheets are based on findings at the time of the tree survey and are not based on any development proposal and are usually works for safety or sound arboricultural reasons and are irrespective of any change in land use.

Glossary

- **Cellular confinement system** – Geosynthetic systems with an open, usually honeycomb-like construction, filled with aggregate to give a three-dimensional structure, to provide a load bearing, **no-dig** surface.
- **Crown lifting** - The removal or shortening of the branches that form the lower part of the crown of a tree.
- **Deadwood** – In the growth and development of a tree, branches compete with each other, and weaker branches are eventually suppressed and die. The dead branches, collectively called deadwood, are then liable to fall, particularly if lacking in **durable heartwood**. Deadwood begins to develop naturally, largely in the inner and lower crown, in all trees that are mature and unmanaged. It develops relatively quickly if **vigour** is low. Deadwood in the outer crown of a mature tree signifies a **decline** that might either be progressive or due to some prejudicial episode in the past (root damage, summer drought, pest, or disease etc.) from which the tree has since recovered. Deadwood is a vital component of a properly functioning woodland or forest **ecosystem**. It plays an important role in sustaining biodiversity and in delivering ecosystem services such as soil formation and nutrient cycling. In the UK, up to a fifth of woodland species depend on dead or dying trees for all or part of their life cycle and many of these species are rare or threatened.
- **Deadwood removal** – The removal of only that proportion of deadwood present in a tree that poses a significant risk to person or property, retaining all stable dead material, reducing longer branches by cutting them back as necessary to assure adequate safety margins.
- **Dieback** - The death of part of a plant, usually starting from a distal point and often progressing proximally in stages.
- **Epicormic** - Pertaining to shoots or roots which are initiated on mature woody stems; shoots can form in this way from dormant buds or they can be adventitious.
- **No-dig hard surface** – A surface built largely on top of the ground, usually using a **cellular confinement system** to spread the load. Used to provide a hard surface with minimal damage to soil structure and roots beneath.
- **Pollard** - A term for a pollarded tree
- **Pollarding** - The complete or partial removal of the crown of a young tree so as to encourage

the development of numerous branches; also, further cutting to maintaining this growth pattern.



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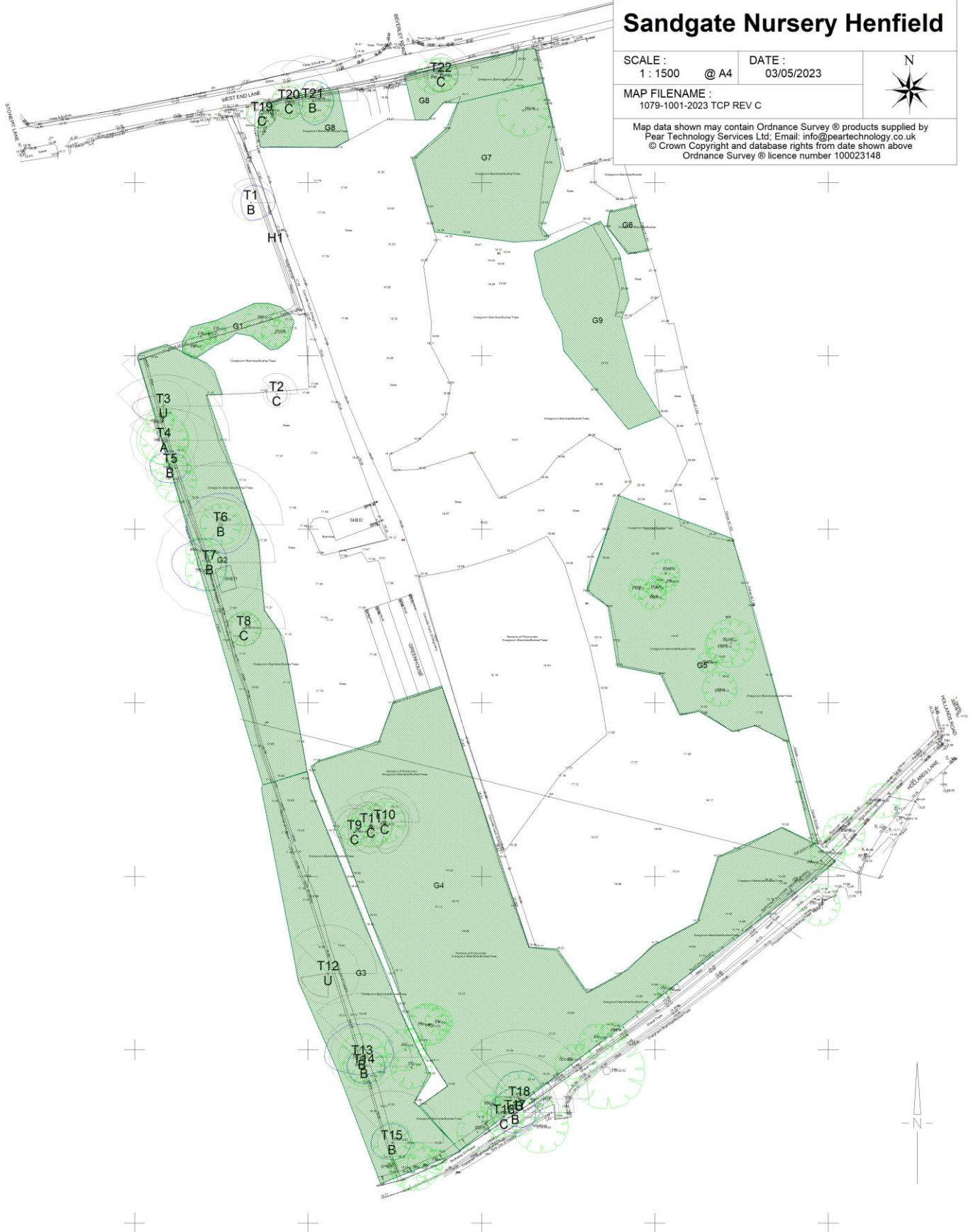
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Tree Location plan



Viking Tree Services Ltd Tamarosia, Rushbrooke Lane, Bury St Edmunds, Suffolk IP33 2RR adam@vtscc.co.uk 077306 21760		
Henfield, Sandgate Nursery		
SCALE : 1 : 2500	@ A3	DATE : 03/05/2023
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Tree removal plan

Planting advice¹

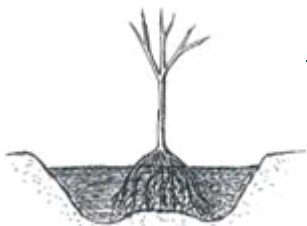


The most common mistake when planting a tree is a digging hole, which is both too deep and too narrow. Too deep and the roots do not have [access](#) to sufficient oxygen to ensure proper growth. Too narrow and the root structure cannot expand sufficiently to nourish and properly anchor the tree.

As a general rule, trees should be transplanted no deeper than the soil in which they were originally grown. The width of the hole should be at least 3 times the diameter of the root ball or container or the spread of the roots in the case of bare root trees. This will provide the tree with enough worked earth for its root structure to establish itself.

When digging in poorly drained clay soil, it is important to avoid 'glazing'. **Glazing occurs when the sides and bottom of a hole become smoothed forming a barrier, through which water has difficulty passing.** To [break up](#) the glaze, use a fork to work the bottom and drag the points along the sides of the completed hole. Also, raising the centre bottom of the hole slightly higher than the surrounding area. This allows water to disperse, reducing the possibility of water pooling in the planting zone.

► Planting Balled and Burlapped Trees.



Balled and burlapped (B & B) trees, although best planted as soon as possible, can be stored for some time after purchase as long as the ball is kept moist, and the tree stored in a shady area. **B & B trees should always be lifted by the ball, never by the trunk.** The burlap surrounding the ball of earth and roots should either be cut away completely (mandatory, in the case of synthetic or plastic burlap) or at least pulled back from the top third of the ball (in the case of natural burlap). Any string or twine should also be removed. Backfill soil (combinations of peat moss, composted manure, topsoil, etc.) is then placed in the hole surrounding the tree just to the height of the ball or slightly lower to allow for some settling. Be careful not to compress the back-fill soil as this may prevent water from reaching the roots and the roots from expanding beyond the ball.

[top](#)

► Planting Container Trees.

Container trees (though subject to greater heat and drying conditions than B and B) can also be stored for a brief period of time after purchase as long as the soil in the container is kept moist and the tree stored in a shady spot. The procedure for planting container trees is similar to that for B & B trees. In the case of metal or [plastic containers](#), remove the container completely. In the case of fibre containers, tear the sides away.

¹ <http://www.tree-planting.com/tree-planting-4.htm>

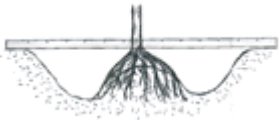


Once carefully removed from the container, check the roots. If they are tightly compressed or 'pot bound', use your fingers or a blunt instrument (to minimize root tearing) to carefully tease the fine roots away from the tight mass and then spread the roots prior to planting. In the case of extremely woody compacted roots, it may be necessary to use a spade to open up the bottom half of the root system. The root system is then pulled apart or 'butterflied' prior to planting. Loosening the root structure in this way is extremely important in the case of container plants. Failure to do so may result in the roots 'girdling' and killing the tree. At the very least, the roots will have difficulty expanding beyond the dimensions of the original container. To further assist this, lightly break up even the soil outside the planting zone. This allows roots that quickly move out of the planting zone to be more resilient as they anchor into existing surrounding soil conditions.

Once the tree is seated in the hole, the original soil is then backfilled into the hole to the soil level of the container. Again, remember not to overly compress the back-filled soil especially by tramping it with your feet. Compress gently using your hands instead.

[top](#)

► Planting Bare-Rooted Trees.

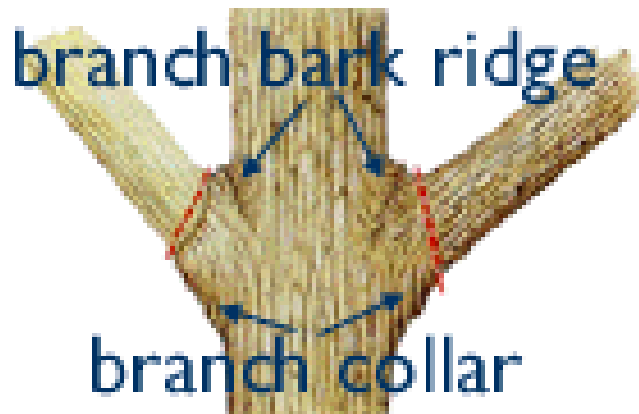


Planting bare-rooted trees is a little different as there is no soil surrounding the roots. Most importantly, the time between purchase and planting is a more critical issue. Plant as soon as possible. When purchasing bare-rooted trees, inspect the roots to ensure that they are moist and have numerous lengths of fine root hairs (healthy). Care should be taken to ensure that the roots are kept moist in the period between purchase and planting. Prune broken or damaged roots but save as much of the root structure as you can.

To plant, first build a cone of earth in the centre of the hole around which to splay the roots. Make sure that when properly seated on this cone the tree is planted so that the 'trunk flare' is clearly visible and the 'crown', where the roots and top meet, is about two inches above the soil level. This is to allow for

Appendix 5

Pruning advice²



How to Prune

Large trees aside, there are many pruning jobs that you can do on your own. In all cases, the key is to prune the unwanted branch while protecting the stem or trunk wood of the tree. Tree branches grow from stems at nodes and pruning always takes place on the branch side of a stem-branch node. Branches and stems are separated by a lip of tissue called a stem collar which grows out from the stem at the base of the branch. All pruning cuts should be made on the branch side of this stem collar. This protects the stem and the other branches that might be growing from it. It also allows the tree to heal more effectively after the prune. To prevent tearing of the bark and stem wood, particularly in the [case](#) of larger branches, use the following procedure:

1. Make a small wedge-shaped cut on the underside of the branch just on the branch side of the stem collar. This will break the bark at that point and prevent a tear from running along the bark and stem tissue.
2. Somewhat farther along the branch, starting at the top of the branch, cut all the way through the branch leaving a stub end.
3. Finally, make a third cut parallel to and just on the branch side of the of the stem collar to [reduce](#) the length of the stub as much as possible.

A similar procedure is used in pruning one of two branches (or one large branch and a stem) joined together in a 'u' or 'v' crotch. This is known as a drop crotch cut. Make the first notch cut on the underside of the branch you are pruning well up from the crotch. For the second cut, cut completely through the

² <http://www.tree-pruning.com/how-to-prune.html>

branch from inside the crotch well up from the ridge of bark joining the two stub, make the third cut just to one side of the branch bark ridge and roughly



branches. Finally, to shorten the remaining parallel to it.

References

WDE Consulting services report number 20740r1

Rsk Soil investigation report number 1920269 ROI (01).

British standard 5837:2012 Trees in relation to design, demolition, and construction

British standard 3998:2017 Tree work recommendations