

Arboricultural Impact Assessment & Method Statement

BE-1220-01G

**Pentlands, New Mill Road, Holmfirth, West Yorkshire
HD9 7LN**



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Client	Priestroyd Construction Ltd
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Executive Summary

David Watts Associates Ltd have been instructed by Priestroyd Construction Ltd to produce an Arboricultural Impact Assessment and Method Statement relating to a proposed development at Pentlands, New Mill Road, Holmfirth, West Yorkshire HD9 7LN.

The site survey identified 13 trees and seven groups of trees with the potential to be affected by the development proposals. These included one Category A tree of high quality, five Category B trees of moderate quality, five Category C trees of low quality, and seven Category C groups of low quality.

The development proposals will necessitate the removal of 10 trees and five groups of trees. These include six Category B trees, four Category C trees and five Category C groups.

The development proposals include the application of hardstanding surfaces within the root protection areas (RPAs) of one tree. These surfaces must be constructed using minimal excavation upon a cellular confinement system.

The proposals will necessitate construction of a retaining wall within the RPA of one tree. This will only affect a small proportion of the RPA, and therefore is not anticipated to result in a significant negative impact. Construction of the wall must be carried out from outside the RPA.

It is recommended that works follow a provided Arboricultural Method Statement. This includes the specification of temporary tree protection fencing to be installed during development works.

It is recommended that tree removals are mitigated by further planting. A separate Ecological Design Strategy is provided to compensate for tree removals.

1. Introduction

1.1. Background

David Watts Associates Ltd have been instructed by Priestroyd Construction Ltd to carry out an Arboricultural Impact Assessment of the land at Pentlands, New Mill Road, Holmfirth, West Yorkshire, HD9 7LN, hereafter referred to as 'the site'.

The purpose of the report is to:

- Assess the quality of the trees on and immediately adjacent to the site, in accordance with BS5837: 2012 – Trees in Relation to Design, Demolition and Construction: Recommendations (hereafter referred to as BS5837: 2012).
- Identify trees suitable for retention and for removal due to the proposed development.
- Prescribe tree protection measures to ensure that retained trees survive the proposed development and thrive after its completion.
- Prescribe arboricultural recommendations for the long-term management of trees on the site.
- To assess the site for its suitability for mitigation planting, and to specify planting requirements.

1.2. Site Details

The site is located at grid reference SE 14809 09173 and is accessed off the west of New Mill Road (A635) in Holmfirth. The site is bordered by a residential property and its access drive to the north, by New Mill Road to the east, residential properties to the south and a garden to the west, approximately 30 m beyond which is a woodland. Figure 1.1, below, shows aerial imagery of the site and the surrounding area.



Figure 1.1 Aerial Imagery of Site and Surrounding Area (Google Earth Pro, 2020)

The site consists of a residential property with its associated garden and parking areas and a field. The topography of the site is relatively flat, with changes in ground level up to approximately 1 m throughout the site.

1.3. Legislation

A search on the website of Kirklees Council (2020) confirmed that there are no TPOs on the site and that the site is not within a Conservation Area.

1.4. Soil Type of the Surrounding Area

Cranfield (2020) states that the surrounding area consists of freely draining, slightly acid loamy soils. No further detailed soil analysis was carried out as part of the survey.

1.5. Development Proposals

The development proposals are to construct 15 residential properties, in addition to their associated gardens and parking areas. A new access drive is to be constructed leading off New Mill Road.

2. Methods

2.1. Site Survey

The site survey was carried out in suitable weather conditions on 11th February 2020.

The survey was carried out by David Watts, a Chartered Arboriculturist (registered with the Institute of Chartered Foresters) and a Professional member of the Arboricultural Association. David holds an FdSc in Arboriculture, a BSc (Hons) in Ecology, a PGCert Arboriculture and Urban Forestry, and has been awarded the LANTRA Tree Inspection Certificate.

Trees were inspected from ground level, using the Visual Tree Assessment (VTA) method (Mattheck *et al.*, 2015). Any notable defects of trees were recorded, although the site survey did not constitute a full tree safety assessment. Tree heights and crown clearances were measured to the nearest 0.5 m with a clinometer. Crown spreads of trees were measured on their, north, east, south and west aspects to the nearest 0.5 m. The diameter at breast height (DBH) of trees was measured to the nearest 1 cm. This was used to calculate the root protection area (RPA) of trees using methods prescribed in BS5837: 2012.

In accordance with BS5837: 2012, trees were classified as either A, B, C or U, using the criteria shown in Table 1. Trees were subcategorised with the suffix 1, 2 and/or 3, to denote amenity, landscape or cultural qualities. As specified in BS5837: 2012, the additional subcategorisation does not affect the retention value of a tree (e.g. a Category A2 tree is not necessarily of greater or less value than a Category A1 tree).

Table 2.1 BS5837 Cascade Chart (adapted from British Standards, 2012)

Category	Definition	Retention	Colour code
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.	Highly desirable	Light green
Category B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years; trees lacking the special quality to merit category A designation.	Desirable	Dark blue
Category C	Trees of low quality with an estimated remaining contribution of at least 10 years, or trees with a stem diameter below 150mm; unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Feasible, but should be removed if posing a constraint to development	Grey
Category U	Trees that have serious, irremediable, structural and/or physiological defects, including those that will become unviable after removal of other category U trees.	Unfeasible	Dark red

2.2. Constraints

The survey was constrained by the season in which it took place. Some pathogens of trees, in particular fruiting bodies of decay fungi, are only visible at certain times of year.

3. Impact Assessment

3.1. Tree Population Assessment

The site survey identified a total of 13 trees and seven groups of trees with the potential to be affected by the development proposals.

The trees on and adjacent to the site included one Category A tree of high quality, seven Category B trees of moderate quality, five Category C trees of low quality, and seven Category C groups of trees of low quality. No Category U trees with a life expectancy of less than ten years were identified on the site.

Table 3.1 Summary of Tree Categories

Category	Description	Tree/group numbers	Totals
A	Trees of high quality which should where be possible be retained throughout any proposed development	T19	1 Tree
B	Trees of moderate quality which should where possible be retained throughout any proposed development	T4, T5, T10, T11, T14, T15, T17	7 Trees
C	Trees of low quality which should not be considered a constraint to development	T1, T6, T7, T8, T16 G2, G3, G9, G12, G13, G18, G20	5 Trees 7 Groups
U	Trees which should be removed for sound management reasons, regardless of proposals	-	-
Total:			13 Trees 7 Groups

Tree data can be viewed in [Appendix 1: Tree Survey Schedule](#). Images of trees can be viewed in [Appendix 2: Photographs](#). Tree locations can be viewed in [Appendix 3: Tree Constraints Plan](#).

Tree species on and adjacent to the site included sycamore *Acer pseudoplatanus*, silver birch *Betula pendula*, deodar cedar *Cedrus deodora*, Lawson cypress *Chamaecyparis lawsoniana*, Leyland cypress *Cupressus x leylandii*, beech *Fagus sylvatica*, ash *Fraxinus excelsior*, holly *Ilex aquifolium*, Norway spruce *Picea abies*, wild cherry *Prunus avium*, Japanese cherry *Prunus* 'Kanzan', goat willow *Salix caprea*, crack willow *Salix fragilis*, elder *Sambucus nigra* and yew *Taxus baccata*.

3.2. Trees Necessitating Removal

The development proposals will necessitate the removal of ten trees and five groups of trees.

Six Category B trees, including T4, T5, T10, T11, T14 and T15 will necessitate removal due to the development proposals.

Four Category C trees and five groups of trees, including T6, T7, T8, T16, G9, G12, G13, G18, G20 will necessitate removal due to the development proposals. A small proportion of G2 will necessitate removal due to the development proposals.

3.3. Works Within Root Protection Areas

The construction of hardstanding surfaces is proposed within the RPA of T17. T17 has an RPA of 132 m². Approximately 2 m², 2% of the total RPA will be affected. The area affected is under the 20% unsurfaced area which can be covered in hardstanding, as recommended in BS5837: 2012. This surfaces will need to be constructed using no excavation, and upon a cellular confinement system. Further details are provided in Section 4.

3.4. Below Ground Utilities

The development proposals do not include any below ground utilities or service runs. These will need to be designed around the RPAs of trees scheduled for retention.

3.5. Post Development Impacts

G2 and G3 are Leyland cypress hedges at the site boundary. These hedges will require further cyclical pruning to ensure that they do not overshadow the proposed properties.

The current layout has been designed to avoid impacts to T19, a Category A tree on adjacent property. The closest proposed building to this tree will be at a distance of 35 m, therefore there are not anticipated to be any post development impacts upon this tree.

3.6. Compensation

The development proposals will necessitate the removal of the majority of trees within the site, although revision of the proposals has ensured the retention of trees at the site boundary, including T1 and T17.

Tree removals should be compensated through the incorporation of tree planting into the development proposals. Tree planting is specified in a separate Ecological Design Strategy.

4. Arboricultural Method Statement

4.1. Timing of Works

The phasing of works should be carried out in accordance with Table 4.1, below:

Table 4.1 Timing of Works

Stage	Works
1	Site induction
2	Carry out tree works
3	Install temporary tree protection fencing
4	Inspection by arboricultural consultant
5	Carry out construction works, including construction of cellular confinement
6	Remove tree protection fencing once works completed
7	Construct boundary fences and carry out landscaping works
8	Final inspection by arboricultural consultant

4.2. Site Induction

Prior to works commencing, all contractors will attend a site induction. Contractors must be briefed on arboricultural concerns arising from the development proposals, including tree root protection areas (RPAs). This method statement must be made available to all contractors working on the site.

4.3. Tree Works

Prior to further works commencing, it is recommended that trees which pose a constraint to development are removed. Trees recommended for removal include T4, T5, T6, T7, T8, G9, T10, T11, G12, G13, T14, T15, G18 and G20.

All tree works must be carried out by a suitably qualified and fully insured arboricultural contractor. At the time of writing trees on the site are not afforded protection by TPOs and are not within a Conservation Area. This may be subject to change, and any legal designations afforded trees must be verified with the local authority prior to works commencing. Killing or damaging a protected tree is a criminal offence, which can result in an unlimited fine.

4.4. Tree Protection

Prior to machinery entering the site, it will be necessary to ensure that all trees are adequately protected by the installation of temporary tree protection fencing. This must remain in place during development works. The location of tree protection fencing can be viewed in [Appendix 4: Tree Protection Plan](#).

Tree protection fencing must consist of a vertical scaffold framework, well braced to resist impacts. The vertical poles should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be fixed (see Figure 4.2, below).

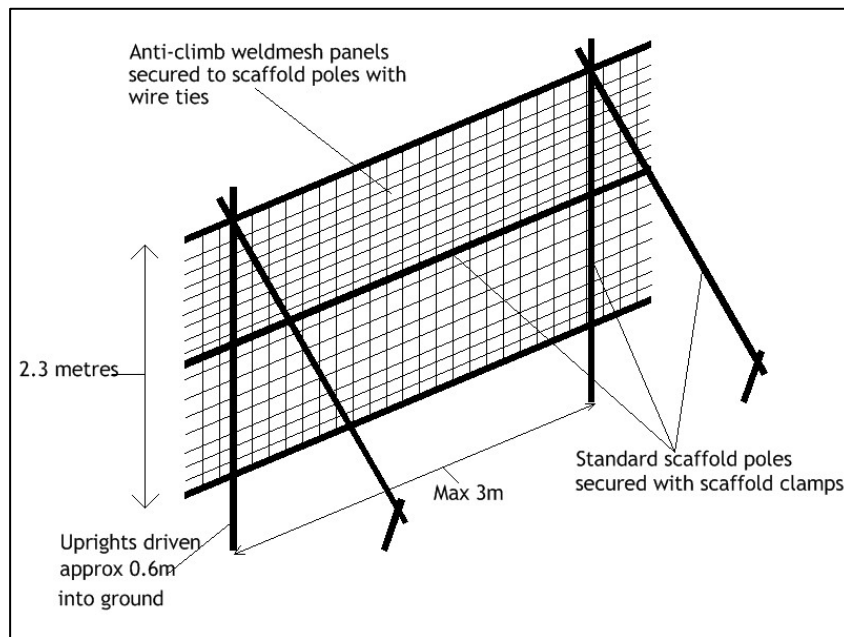


Figure 4.2 Temporary Protective Fencing

Laminated waterproof A3 signs should be fixed securely to fencing panels on each enclosure at 9 m intervals. The signs should clearly read: 'Protected Tree Zone, no storage or operations within fenced off areas'.

Once the construction works have been completed, the tree protection fencing may be removed. This should be done with care to ensure that no damage to trees is caused.

4.5. Cellular Confinement

The hardstanding surfaces within the RPA of T17 must be constructed upon a cellular confinement system (recommended products include Cellweb and Terram Geocell).

A diagram illustrating installation of the geocellular confinement system can be viewed in Figure 4.3, below. Installation must be carried out in the following stages:

1. Cover surface with a non-woven, geotextile separation filtration layer.
2. Install cellular confinement sheets.
3. Place 40/20 mm clean angular stone into open cells.
4. Cover with second non-woven geotextile separation filtration layer
5. Install 75 mm porous asphalt or decorative gravel.

As the majority of tree roots are typically found within 1 m of ground level, particular attention must be paid to existing levels, and no further excavation may be carried out within these areas without first notifying the local authority tree officer.

Installation of the cellular confinement should be carried out by hand. No vehicles or heavy machinery may be operated within the RPA of T17. The use of tracked excavators and dumper trucks may be considered, however this will need to be operated from outside the RPAs of the trees, and considering the relatively small area that cellular confinement is to be applied, this is unlikely to be necessary.

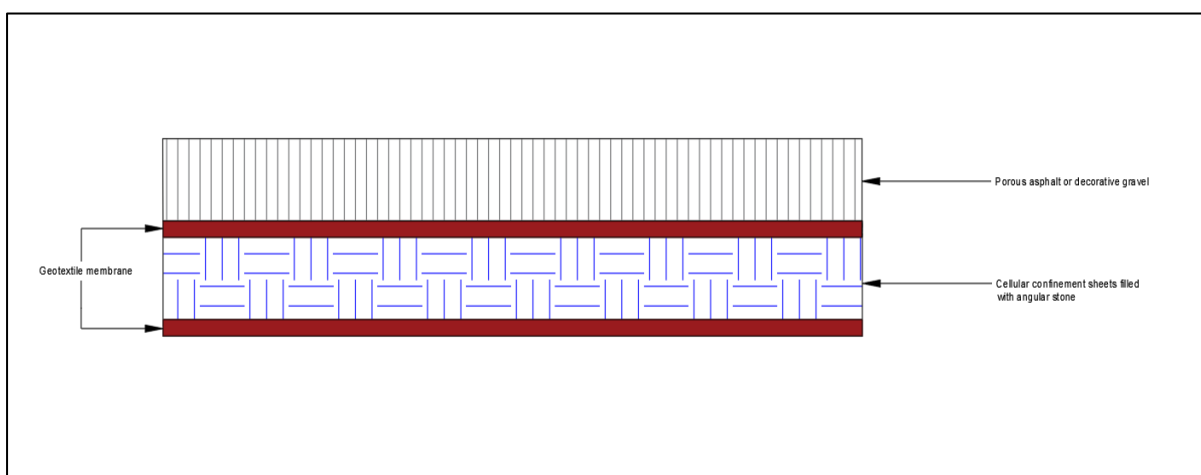


Figure 4.3 Geocellular Confinement Construction

Note that while the use of cellular confinement can be prescribed by the project arboriculturist, to ensure it is sufficiently durable the final specification must be approved by a civic engineer. This may be the project engineer or an engineer from the geocell provider.

4.6. General Precautionary Measures

Prior to the commencement of development works, a site storage area should be designated. This must be outside the RPAs of trees.

No materials hazardous to tree health, such as oil, bitumen or cement should be stored within the RPAs of trees.

No fires may be lit within the site.

Where there is a risk of polluted water runoff into RPAs, heavy duty plastic sheeting and sandbags must be used to contain any spillages and prevent contamination.

If any breach in the tree protection measures occurs, it is the site manager's responsibility to report this to an arboricultural consultant so that appropriate measures may be taken.

4.7. Construction of Boundary Fences and Landscaping

It will be necessary to construct boundary fences within the RPAs of T1 and T19. As these areas are behind the proposed tree protection fencing, either this stage of works should be carried out after all other construction works have been completed and the tree protection removed, or alternatively a temporary setback in the fencing will be required. The setback of the fencing must be carried out under the supervision of the project arboriculturist. Upon completion of this phase of the works, the fencing must then be moved back to its initial position.

While carrying out construction of fences within the RPAs of T1 and T19, wheeled or tracked machinery must not be used. No excavation may be carried out with the exception of minimal excavation to install fence posts. This should be achieved by using a handheld excavation tool, such as a Dutch auger or fence auger. No pneumatic tools may be used within this area.

While digging post holes within the RPA, contractors should dig exploratory holes by hand, and if structural roots over 5 cm are identified, holes should be backfilled and alternative locations sought. This should be achieved by either realigning the fence line, or by installing fence panels of alternating lengths to achieve greater or less distance between fence posts (e.g. contractors could commence work with fence panels of 3 m and 2.5 m, then if roots are identified within an exploratory posthole 3 m from the last, an alternative posthole at 2.5 m should be dug).

The remaining landscaping will require works within the RPAs of trees. This should be carried out once all construction works have been completed and the tree protection fencing has been removed. When carrying out landscaping works, the use of vehicles and heavy machinery within the RPAs of trees must be avoided.

4.8. Further Inspections

It is recommended that inspections by an arboricultural consultant are undertaken:

- Upon installation of tree protection fencing to determine if it is satisfactory.
- Upon completion of the development works.

After each inspection a letter accompanied by photographic evidence will be submitted by the arboricultural consultant to the local authority tree officer to confirm if the method statement has been followed correctly and whether trees have been adversely affected by construction works.

4.9. Project Arboriculturist Details

If any issue regarding tree protection arises during the course of development works, the project arboriculturist should be contacted using the details below:

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Appendix 1: Tree Survey Schedule

Key		
Species	Common name. See Results section for scientific names	Age
Height	Measured to nearest 0.5 m	Y – Young sapling/newly planted tree
CC	Height of crown clearance, measured to nearest 0.5 m	SM – Semi-mature; tree 1/3 of mature size
Stems	Number of stems bifurcating below 1.5 m	EM – Early mature; tree 2/3 of mature size
DBH	Diameter at breast height (1.5 m), in cm	M – Mature; tree 3/3 of mature size
Crown spread	Measured to nearest 0.5 m	OM – Over mature; tree that has exceeded its natural life span
Category	See BS5837 cascade chart (Table 1)	V – Veteran tree

A plan showing the location of trees can be viewed in **Appendix 3: Tree Constraints Plan**.

Tree No.	Species	Height	CC	Stems	DBH	Crown Spread				Age	Comments	SULE	Category
						N	E	S	W				
T1	Crack willow	11	3	3	50	6	6	5.5	4	EM	Dense vegetation around stems, unable to fully inspect.	11-20	C1
G2	Leyland Cypress, silver birch, Norway spruce	5	2.5	26	20	2	2	2	2	EM	Linear group of trees on adjacent land, behind 1 m high wall. Cypress trees previously topped.	11-20	C1
G3	Leyland cypress	4	1	8	15	1	1	1	1	SM	Linear group of trees at site boundary. Low quality trees, although screening provided between site and adjacent property.	11-20	C2
T4	Sycamore	14.5	2	2	35	4	4.5	4	4.5	EM	Dense vegetation around stem, unable to access to fully inspect.	21-40	B2
T5	Sycamore	14	0	1	39	3	3	3.5	3	EM	Lapsed epicormic growth. Stem bifurcates at 3 m with included bark at primary branch unions.	21-40	B2

Tree No.	Species	Height	CC	Stems	DBH	Crown Spread				Age	Comments	SULE	Category
						N	E	S	W				
T6	Lawson cypress	10.5	0	2	44	2	2	2.5	2	M	Included bark at stem unions with good occlusion. Lacks qualities for higher categorisation.	21-40	C2
T7	Japanese cherry	5.5	2.5	3	29	3	3.5	3	4	M	Poor graft compatibility. Included bark at stem and primary branch unions with poor occlusion.	11-20	C1
T8	Japanese cherry	4.5	2	1	47	3.5	3	2.5	3	M	Included bark at primary branch unions with poor occlusion. Decay on primary branch.	11-20	C1
G9	Yew, holly, Leyland cypress, rhododendron	6	0	9	20	2	2	2	2	SM	Semi mature trees and shrubs in raised bed.	11-20	C1
T10	Beech	11.5	3	1	44	5	5	2.5	4	EM	Tertiary branches conflicting with lamppost.	21-40	B2
T11	Deodar cedar	12	4	1	36	2	2.5	1.5	1.5	SM	No major visible defects. Lacks qualities for higher categorisation.	21-40	B2
G12	Holly, Leyland Cypress, yew, Japanese cherry	5	0	6	15	2	2	2	2	SM	Semi mature trees and ornamental shrubs.	21-40	C1
G13	Wild cherry, pedunculate oak, holly	10	1	23	12	2	2	2	2	SM	Densely spaced semi mature trees at site boundary.	21-40	C1
T14	Sycamore	14	5	3	33	4	3	4	3.5	M	Included bark at stem unions. Utility wires through crown.	21-40	B2
T15	Ash	14	4	2	44	6	5.5	2.5	8	M	Lean to west away from wall. Deadwood <10 cm diameter.	21-40	B2

Tree No.	Species	Height	CC	Stems	DBH	Crown Spread				Age	Comments	SULE	Category
						N	E	S	W				
T16	Ash	13	4	2	35	1.5	3.5	5	5	M	Pruning wounds on stem. Suppressed by adjacent tree with unbalanced crown. Conflict with lamp post. Third stem removed. Primary branch to west died back.	11-20	C2
T17	Sycamore	16.5	4.5	1	54	4	4	4.5	4	M	Drystone wall included into cambium. Pruning wounds on stem.	21-40	B2
G18	Sycamore, goat willow	7	0	4	30	4	4	4	4	M	Trees at site boundary of low quality.	21-40	C1
T19	Beech	17.5	3	1	84	5	6	5	4	M	Large pruning wound on stem.	40>	A2
G20	Leyland cypress, elder	5	0	2	20	2	2	2	2	SM	Two cypress at property boundary with ornamental shrubs.	11-20	C1

Appendix 2: Images of Trees

(All photographs taken in February 2020)



Plate 1: T1



Plate 2: T4 & T5



Plate 3: T6 & T7



Plate 4: T8



Plate 5: T10 & T11



Plate 6: T14 & T15



Plate 7: T16 & T17



Plate 8: T19



Plate 9: G2



Plate 10: G3



Plate 11: G9



Plate 12: G12



Plate 13: G13

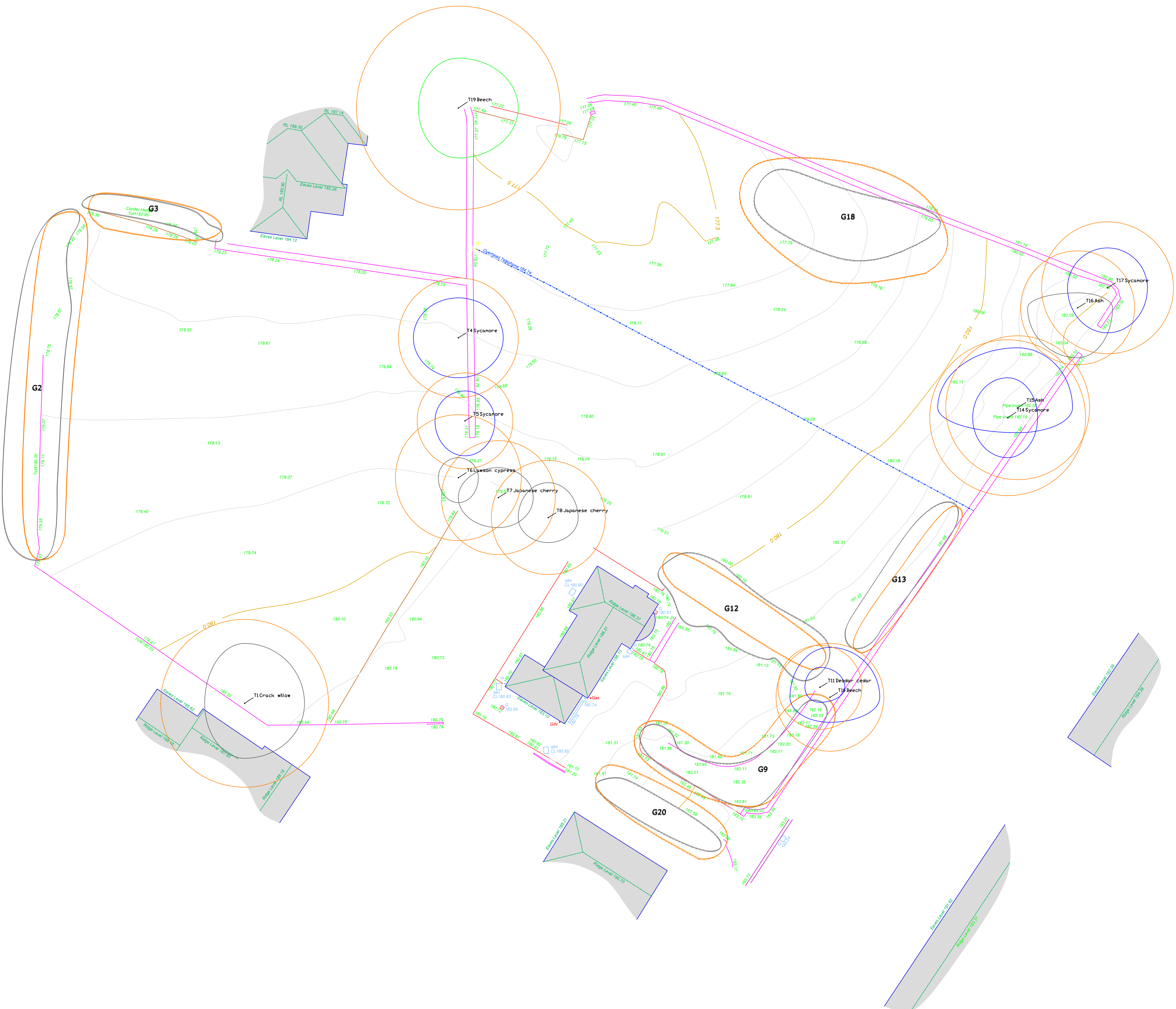


Plate 14: G18



Plate 15: G20

Appendix 3: Tree Constraints Plan



Key:

Category A trees of high quality

Root protection area (RPA)
Tree stem
Tree canopy

Category B trees of moderate quality

Root protection area (RPA)
Tree stem
Tree canopy

Category C trees of low quality

Root protection area (RPA)
Tree stem
Tree canopy

Drawing title:	Tree Constraints Plan
Project:	Pentlands
Drawn by:	David Watts
Drawing number:	TCP-1220-01
Date:	17/02/2020
Scale:	1:200 @ A1

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Appendix 4: Tree Retention & Tree Protection Plan

(showing trees to be removed and retained and tree protection measures)



Key:

Trees to be retained

Root protection area (RPA) →

Tree stem →

Tree canopy →

Trees to be removed

Root protection area (RPA) →

Tree stem →

Tree canopy →

Tree protection fencing - to remain in place during development works

Extent of Cellular Confinement

For further details regarding tree protection fencing, precautionary working practices and construction of geocellular confinement, refer to Arboricultural Method Statement (Section 4 of Arboricultural Impact Assessment & Method Statement Report)

Drawing title:	Tree Protection Plan
Project:	Pentlands
Drawn by:	David Watts
Drawing number:	TPP-1220-04
Date:	19/10/2021
Scale:	1:200 @ A1

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