Arboricultural Impact Assessment

Clay Lane Cottage

The Street

Edingthorpe

Norfolk

NR28 9SU

TE-308.1

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Report title	Arboricultural Impact Assessment
Report reference	TE-308
Revision	A
Site address	Clay Lane Cottage The Street Edingthorpe Norfolk NR28 9SU
Grid reference	TG 31361 32247
Report compiled by	Larry Liptrot BSc (Hons) FdSc
Client	Luke Butler
Date	16/08/2023

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Executive Summary

Site Address	Clay Lane Cottage, The Street, Edingthorpe, Norfolk, NR28 9SU
Grid Reference	TG 31361 32247
Proposed Development	The development proposal is to demolish existing buildings and construct a two-storey residential dwelling and open sided cart shed.
Results	The site survey identified a total of 5 individual trees and 3 groups of trees/hedges on/adjacent to the site. All trees and groups of trees on site are Category C trees of low quality.
Conclusions and Recommendations	The partial removal of G2, G3, and the removal of T1, T2, T3 and T4 will be required to facilitate the development proposal. It is recommended that all works follow an Arboricultural Method Statement, which should include the provision of temporary tree protection fencing.

1. Introduction

Instruction

Talking Elm Tree Services have been instructed by Luke Butler to undertake an Arboricultural Impact Assessment of the land at Clay Lane Cottage, The Street, Edingthorpe, Norfolk NR28 9SU.

1.1. 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 thrive after the development has been completed.
- 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.

Site Details

1.2. The site is located at grid reference TG 31361 32247 and is accessed from The Street, Edingthorpe.

1.3. The site is bordered by agricultural land on all sides.

Figure 1.1. Aerial imagery of site and surrounding area (Google Earth Pro, 2023)

Proposed Development

1.4. The development proposal is to demolish existing buildings and construct a two-storey residential dwelling and open sided cart shed.

2. Methods

2.1. The local council was consulted to determine if any trees on the site and immediately adjacent to the site are protected by Tree Preservation Orders (TPOs) and/or are within Conservation Areas. Cranfield (2023) was consulted as to the soil type of the surrounding area.

2.2. The site survey was carried out on 16th August 2023. The survey was carried out by Larry Liptrot, an experienced Arboricultural Consultant, who holds an FdSc in Arboriculture, a BSc (Hons) in Ecology and has been awarded the Lantra Professional Tree Inspection Certificate.

2.3. All trees on site were inspected from ground level, using the Visual Tree Assessment (VTA) method (Mattheck *et al,* 2015). Tree locations were plotted, and tree heights and crown clearance heights were measured using a clinometer. Canopy spread was paced out by the consultant. The diameter at breast height (DBH) of trees was recorded by measuring the circumference of tree stems at an approximate height of 1.5m.

2.4. Any visible structural and/or physiological defects of trees were recorded; however, no advanced decay analysis or aerial inspection techniques were carried out, and the tree inspection does not constitute a full tree safety assessment.

2.5. The retention value of all trees was classified as A, B, C or U, using the criteria shown in Table 2.1.

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

Category	Definition	Retention
Category A	Trees of high quality with an estimated remaining life expectancy of at least 40 years; trees that are particularly good examples of their species, especially if rare or unusual.	Highly desirable
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
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 can be removed if posing a constraint to development
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

3. Results

Desk Based Study

3.1. An internet search of the North Norfolk District Council website on 16/08/2023, confirmed that the property is not within a Conservation Area (CA), and no trees or groups of trees on site are subject to a Tree Preservation Order (TPO).

3.2. Cranfield (2023) states that the surrounding area consists of freely draining, slightly acid loamy soils.

Tree Population Assessment

3.3. The site survey identified a total of 5 individual trees and 3 groups of trees with the potential to be affected by the development proposals.

3.4. The trees on the site include: 5 Category C trees and 3 groups of Category C trees of low quality.

Category	Description	Tree/group numbers	Totals
A	Trees of high quality which should where possible be retained throughout any proposed development	-	-
B	Trees of moderate quality which should where possible be retained throughout any proposed development	-	-
C	Trees of low quality which should not be considered a constraint to development	T1, T2, T3, T4, T5, G1, G2, G3	5 Trees and 3 Groups
U	Trees which should be removed for sound management reasons, regardless of proposals	-	-
Total:			**5 Trees and 3 Groups**

The tree species on and adjacent to the site include: Apple *Malus sp*.; Ash *Fraxinus excelsior*; Box *Buxus sempervirens*; Buddleia *Buddleja davidii*; Elder *Sambucus nigra;* Elm *Ulmus procera,* Field maple *Acer campestre*; Norway spruce *Picea abies*; Lawson cypress *Chamaecyparis lawsoniana;* Hawthorn *Crataegus monogyna*; Hazel *Corylus avellana;* Laburnum *Laburnum anagyroides*; Plum *Prunus domestica*; Privet *Ligustrum vulgare*; Silver birch *Betula pendula*; Silverthorn *Elaeagnus pungens;* Viburnum sp., and Yew *Taxus baccata.*

4. IMPACT ASSESSMENT

Tree Removals due to Development

The partial removal of G2, G3, and the removal of T1, T2, T3 and T4 will be required to facilitate the development proposal.

Table 4.1 Summary of trees necessitating removal due to development

CATEGORY	TREE/GROUP NUMBERS	TOTALS
A	-	0
B	-	0
C	T1, T2, T3, T4, G2, G3	4 Trees and 2 Groups
U	-	0

Retained trees

4.1. The root protection area (RPA) of T5 will be impacted upon by the proposed development, however this will not be greater than 20% of the RPA of the tree. These works should be done under the supervision of a suitably qualified arboricultural consultant (see Appendix C).

4.2. Post Development Pressure upon trees is unlikely as most of the trees are located along the boundary and act as a privacy barrier.

5. RECOMMENDATIONS

Tree Removals

5.1. The partial removal of G2, G3, and the removal of T1, T2, T3 and T4 will be required to facilitate the development proposal. The trees recommended removal are all Category C trees of low quality and should not be considered a constraint to developmnet.

5.2. All tree works should be carried out by a suitably qualified and fully insured arborist who is able to comply with BS3998: 2010 – Tree Works: Recommendations.

Arboricultural Method Statement

5.3. To ensure that all trees scheduled for retention survive the proposed development and thrive upon its completion, all works should follow an Arboricultural Method Statement (AMS). This should include the specification of temporary tree protection fencing during development works, which should be detailed in a Tree Planting Plan.

5.4. The AMS should account for any further change to the scheme, particularly the provision of any below ground utilities which have the potential to impact upon tree roots.

6. References

British Standards (2010). *BS3998: 2010 – Tree Works: Recommendations*

British Standards (2012). *BS5837: 2012 - Trees in Relation to Design, Demolition and Construction: Recommendations*. London: British Standards Institute

British Standards (2014). *BS8545: 2014 – Trees: from Nursery to Independence in the Landscape.* London: British Standards Institute

Cranfield (2021). *Interactive Soilscapes Viewer* [online]. Available at: >www.landis.org.uk< [accessed 2021]

Google Earth Pro (2021). *Google Earth* [online]. Available at: >www.google.co.uk/earth< [accessed 2021]

Johnson, O., More, D. (2004). *Collins Tree Guide.* London: HarperCollins

Mattheck, C., Bethge, K., Weber, K. (2015). *The Body Language of Trees.* Karlsruhe (Germany). The Karlsruhe Research Institute

Appendices

Appendix A: Tree Survey Schedule

A plan of the tree locations can be viewed in Appendix D: Tree Retention Plan.

Key				
Species	Common name following Johnson & More (2004)	**Age**	EM – Early mature; tree in 2/3 of estimated lifespan	
H	Height, to nearest 0.5 metres		M – Mature; tree in 3/3 of estimated lifespan	
CC	Height of crown clearance, to nearest 0.5 metres		OM – Over mature; tree that has exceeded its natural life span	
No of stems	Number of stems bifurcating below 1.5 metres		V – Veteran tree	
DBH	Diameter at breast height (1.5m), to nearest 10 millimetres	**RPA**	Root protection area, in metres squared	
Crown spread	To nearest 0.5m	**RPR**	Root protection radius, in metres	
Age	Y – Young sapling/newly planted tree	**SULE**	Safe useful life expectancy of tree, in years	
	SM – Semi-mature; tree in 1/3 of estimated lifespan	**Category**	See BS5837 cascade chart (Table 2.1)	**AV** Average

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (mm)	Crown Spread				Age	Comments	RPA(m2)	RPR (m)	SULE	Category
						N	E	S	W						
T1	Norway spruce *Picea abies*	12	0.2	1	380	4	3	5	4	EM	Minor deadwood throughout crown. Main stem bifurcates at 2m with weak v-shaped union. Occluded by T2 to the south.	65	4.6	11-20	C1
T2	Norway spruce *Picea abies*	9	0	1	300	3	1	3	4	EM	Minor deadwood throughout crown. Occluded by T1 and T3 to north and south.	41	3.6	11 - 20	C1
T3	Norway spruce *Picea abies*	10	0	1	340 (est.)	4	2	3	4	EM	Minor deadwood throughout crown. Occluded by T2 and T4 to north and south	52	4.1	11 - 20	C1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (mm)	Crown Spread				Age	Comments	RPA(m2)	RPR (m)	SULE	Category
						N	E	S	W						
T4	Norway spruce *Picea abies*	13	2	1	290 (est.)	2	2	2	2	SM	Minor deadwood throughout crown. Ivy covered stem. Occluded by T3 to north.	38	3.5	11 - 20	C1
T5	Ash *Fraxinus excelsior*	14	2	1	960	5	6	10	8	OM	Major deadwood throughout crown. Large dead hanging limb at 4m in centre of crown. Large cavity at 4m south west.	4	1.1	11 - 20	C1
G1	5% Hawthorn, 5% Box, 65% Elm, 5% Apple, 20% Field maple	3 (avg.)	3	120 (est.)	200 (avg.)	-	-	-	-	Y - M	Boundary hedge with limited arboricultural merit.	18	2.4	11 - 20	C2
G2	25% Hawthorn, 5% Buddleia, 20% Privet, 10% Elder, 5% Hazel, 5% Yew, 5% Silver birch, 5% Plum, 10% Laburnum 10% Viburnum	3 (avg.)	3	70 (est.)	90 (avg.)	-	-	-	-	Y - SM	Young to semi mature boundary hedge with limited arboricultural merit	4	1.1	11 - 20	C2
G3	20% Silverthorn, 30% Lawson Cypress, 20% Privet, 30% Hawthorn, 20% Elm	4 (avg.)	4	60 (est.)	80 (avg.)	-	-	-	-	Y - M	Boundary trees with limited arboricultural merit	3	1.0	11 - 20	C2

Appendix B: Photos of trees and groups

Fig. 1: T1

Fig. 2: T2

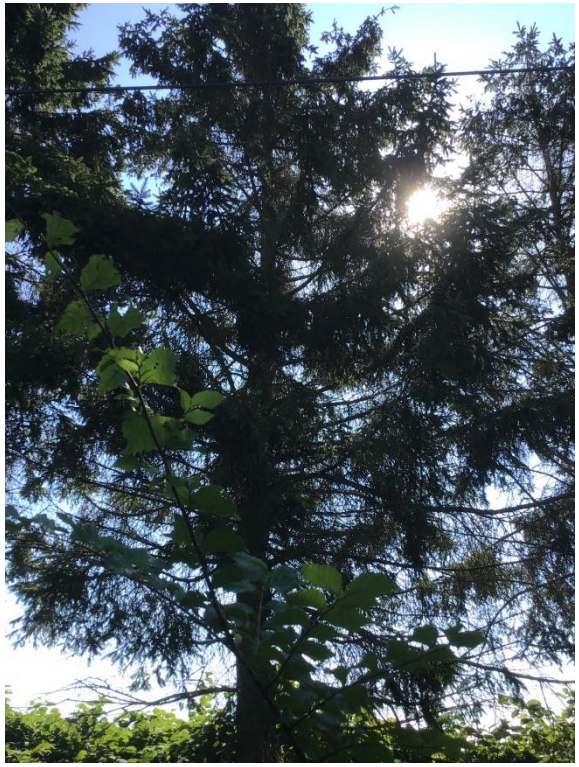


Fig. 3: T3

Fig. 4: T4

Fig. 5: T5

Fig. 6: G1

Fig. 7: G2

Fig. 8: G3 and part of T5

Appendix C: Arboricultural Method Statement

The phasing of works must be carried out in accordance with the table below:

Timing of Works

Stage	Works
1	**Site induction**
2	**Tree works**
3	**Install temporary tree protection fencing and ground protection**
4	**Inspection by arboricultural consultant**
5	**Carry out construction works, including construction of cellular confinement**
6	**Remove tree protection fencing and ground protection once works completed**
7	**Final inspection by arboricultural consultant**

1.1. 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.

1.2. Tree Works

The partial removal of G2, G3, and the removal of T1, T2, T3 and T4 will be required to facilitate the development proposal. This should be carried out by a suitably qualified and fully insured arboricultural contractor who is able to comply with British Standards (2010)1.

At the time of writing trees on site are not protected by a Conservation Area (CA), or a Tree Preservation Order (TPO). This may be subject to change, therefore legal designations must be verified with the local authority prior to works commencing. Killing or damaging a protected tree is a criminal offence, subject to an unlimited fine.

1.3. Tree Protection

The Root Protection Areas (RPA) of T5 is within the area of the proposed cart shed. This area ids less than 20% of the trees total RPA, and therefore it Is deemed permissible. The concrete for the posts for the cart shed however should be set in thick plastic to stop it from leaching and damaging the roots found there.

Any excavations within the RPA of T5 will require inspection and/or supervision by a consulting arboriculturalist. Excavations within the RPAs should not exceed 20% of T5s' total RPA and will require hand digging; care must be taken not to sever any roots greater than 25mm and any root pruning should not be done without the presence and permission of an arboricultural consultant. Furthermore, any exposed roots during excavations should be covered in damp straw or hessian covers.

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. The location of tree protection fencing can be viewed in Appendix 4: Tree Protection Plan. To ensure that RPAs are

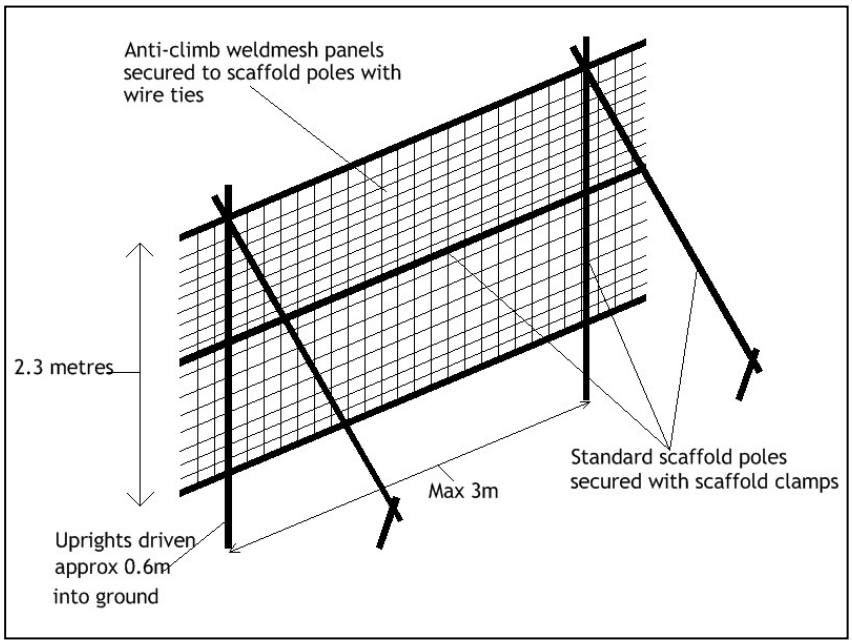
[1] British Standards (2010). *BS3998: 2010 – Tree Works: Recommendations.* British Standards Institute, London

adequately protected, the tree protection fencing should be sited by measurement from the existing trees. For example, T5 has a root protection radius (RPR) of 11.5m, therefore the tree protection fencing must be at least 11.5m from the stem of this tree.

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 3m and driven securely into the ground. Onto this framework, welded mesh panels should be fixed (see Figure 4.2, below).

Laminated waterproof A3 signs should be fixed securely to fencing panels on each enclosure at 9m 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 must be done with care to ensure that no damage to trees is caused.



Temporary Protective Fencing

1.4. Ground Protection

To provide adequate working space to construct the car port within the RPA of T5, access behind the tree protective fencing maybe required, if this is the case then ground protection must be implemented within these areas of T5s' RPA.

Ground protection must consist of three layers of material:

- A geotextile membrane, which must be pinned securely to the ground.
- Woodchip or other compression resistant material to a depth of at least 150 mm.
- Scaffold boards (or similar resistant surface), interlinked and well-braced to resist impacts.

The ground protection will be sufficient to withstand pedestrian traffic and the operation of machinery up to 1 tonne in weight. If the operation of heavier machinery or the passage of heavy vehicles is required within these areas, more robust protection will be required and advice from the project arboriculturist should be sought.

As with tree protection fencing, this must be installed prior to the commencement of works and removed only when all works have been completed.

1.5. General Precautionary Measures

Prior to the commencement of development works, a site storage area must 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 15m of the protective fencing.

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.

1.6. Further Inspections

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

- Upon installation of the tree protection fencing to determine if it is satisfactory. The arboricultural consultant will then deliver a toolbox talk to the site manager prior to the commencement of works.
- Upon completion of the development works to determine whether the method statement has been followed and that trees scheduled for retention have not been impacted by development works.

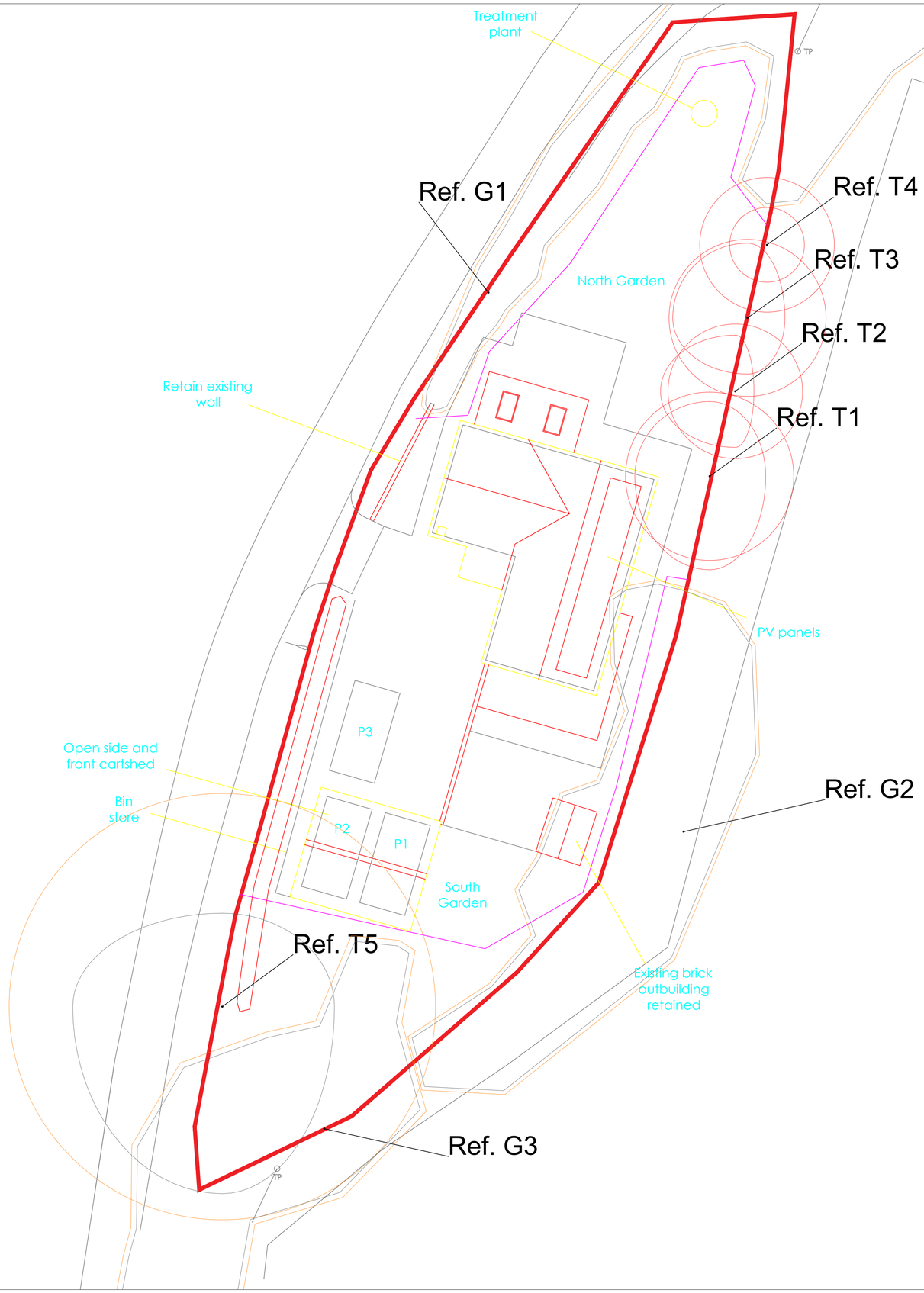
1.7. Project Arboriculturist Details

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

Larry Liptrot / Amelia Mcfarlane

Email: info@talkingelm.co.uk

Telephone: 07402784980



Appendix D and E: Tree Retention and Tree Protection Plan

Project:	Clay Ln, Edingthorpe
Drawn by:	Larry Liptrot
Date:	16/08/2023
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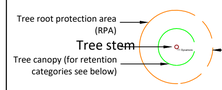

Trees recommended for removal shown with dashed line

- Category A trees of high quality
- Category B trees of moderate quality
- Category C trees of low quality
- Category U trees unsuitable for retention
- Root protection area - to remain protected throughout proposals
- Tree protection fencing - to remain in place throughout proposals
- Proposed cellular confinement system (see method statement for further details)

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