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# **Arboricultural Report**

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**Proposed development at**

**1 Fir Walk  
RAF Lakenheath  
Brandon  
Suffolk**

**28th July 2022**



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## Client & Site

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# 1 Fir Walk RAF Lakenheath

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## Planning authority

West Suffolk Council  
West Suffolk House  
Western Way  
Bury St Edmunds  
Suffolk  
IP33 3YU

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## **Summary**

- This report provides the results of a tree survey of land at 1 Fir Walk, RAF Lakenheath, Brandon, Suffolk, IP27 9QS and an arboricultural constraints assessment of the site, which may be used to inform the planning process.
- The local planning authority is West Suffolk Council and interrogation of the Council's interactive web-based planning constraints maps confirms that Tree Preservation Order TPO 031 (2017) protects the tree in question, but that there is no Conservation Area at RAF Lakenheath
- The site contains no high quality (BS 5817:2012 Category A) trees.
- No trees are to be removed to make space for the proposed development.
- Recommended root protection areas are mapped in this report. No construction activities should take place within root protection areas, except as indicated in the detailed method statement.
- We consider that development can be accommodated with minimal impacts on the retained arboricultural interest of the site.

## **1. INTRODUCTION**

- 1.1. Greenlight Environmental Consultancy Ltd has been commissioned to prepare an arboricultural report for land at 1 Fir Walk, RAF Lakenheath, Brandon, Suffolk, IP27 9QS.
- 1.2. The site was accessed from approximate grid reference TL 72209 79502.
- 1.3. The report includes a survey of those trees that may be affected and an assessment of the potential arboricultural impact of the proposed development on the trees.

## **2. METHODOLOGY**

- 2.1. The tree survey and arboricultural aspects have been prepared in accordance with recommendations provided in BS 5837:2012, Trees in relation to design, demolition and construction – recommendations.
- 2.2. The site survey included trees, within the boundaries of the site and those considered to be potentially affected by development proposals, with a stem diameter over 75mm at 1.5m height.
- 2.3. The tree inspection took place from ground level using visual tree assessment methods, with the use of binoculars and Suunto clinometer. The presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could increase the risk of structural failure were noted.
- 2.4. Details for each tree were recorded with management recommendations if deemed necessary for the development requirements, a category grading according to BS 5837:2012, and tree protection distance.

### **Constraints**

- 2.5. No internal decay devices or other invasive tools to assess tree condition were used.
- 2.6. No soil excavation or root inspection was carried out.
- 2.7. The survey has not considered the effect that trees or vegetation may have on the structural integrity of future building through subsidence or heave.

### 3. DESKTOP REVIEW

- 3.1 The proposed development site is located in RAF Lakenheath former residential area. RAF Lakenheath is a Royal Air Force station near the village of Lakenheath in Suffolk, England, UK, 4.7 miles northeast of Mildenhall and 8.3 miles west of Thetford. The base sits close to Brandon and is the home of 48<sup>th</sup> Fighter Wing of the USAF.
- 3.2 The development proposal is for the side and rear extension of the existing dwelling.
- 3.3 The local planning authority is West Suffolk Council and interrogation of the Council's interactive web-based planning constraints maps confirms that Tree Preservation Order TPO 031 (2017) protects the tree in question, but that there is no Conservation Area at RAF Lakenheath.



Figure 1. Site location

## 4. FIELD STUDY

- 4.1. The site is currently a residential dwelling within the densely built up area designed to house the RAF base personnel at the height of its use. Formerly within the restricted area, the houses within this housing estate are now privately owned. The proposal is to extend the current dwelling into the enclosed garden to the side and rear.
- 4.2. The trees on the site is restricted to a single open grown purple maple growing within the front garden lawn, which is enclosed by a newly planted hawthorn hedge on the boundary. There is an underground gas storage tank also in the front garden and possibly also within the rooting area of the tree.
- 4.3. The site is residential/urban in character. The plot is surrounded by existing high density development on all sides. There are other feature trees of a similar age throughout the estate. These trees collectively add some much needed green infrastructure to what is otherwise a largely unplanted housing estate.
- 4.4. The soils in this area are generally freely draining, slightly acid, sandy soils and thus of low natural fertility and moderately resistant to compaction. The site stands in on the edge of The Fens National Character Area (NCA 46); *“The Fens National Character Area (NCA) is a distinctive, historic and human-influenced wetland landscape lying to the west of the Wash estuary, which formerly constituted the largest wetland area in England. The area is notable for its large-scale, flat, open landscape with extensive vistas to level horizons. The level, open topography shapes the impression of huge skies which convey a strong sense of place, tranquillity and inspiration. It is a large, low-lying, flat landscape with many drainage ditches, dykes and rivers that slowly drain towards the Wash, England’s largest tidal estuary. The single obvious factor uniting the Fens is the low-lying, level terrain reflecting its geological past. With the exception of the Isle of Ely, which reaches above 20 m, elevations rarely pass the 10 m contour, and typically vary by little more than one or two metres over long distances. Much of the land is below sea level, relying on pumped drainage and the control of sluices at high and low tides to maintain its agricultural viability. The level horizons and the huge scale of the landscape create a strong sense of isolation and tranquillity, and a distinctive sense of place. There are, typically, large open panoramas and enormous skies, whose changing weather patterns have a strong influence on the observer. Four major rivers drain into the Wash: the Witham, Welland, Nene and Great Ouse. All rivers now have artificial canalised courses that run straight for long distances and are bounded by high banks to contain the watercourse from the lower adjacent fields.”*
- 4.5. This is a densely developed site and whilst in clear view from the public road, it is suggested that any re-development would have minimal visual impacts.

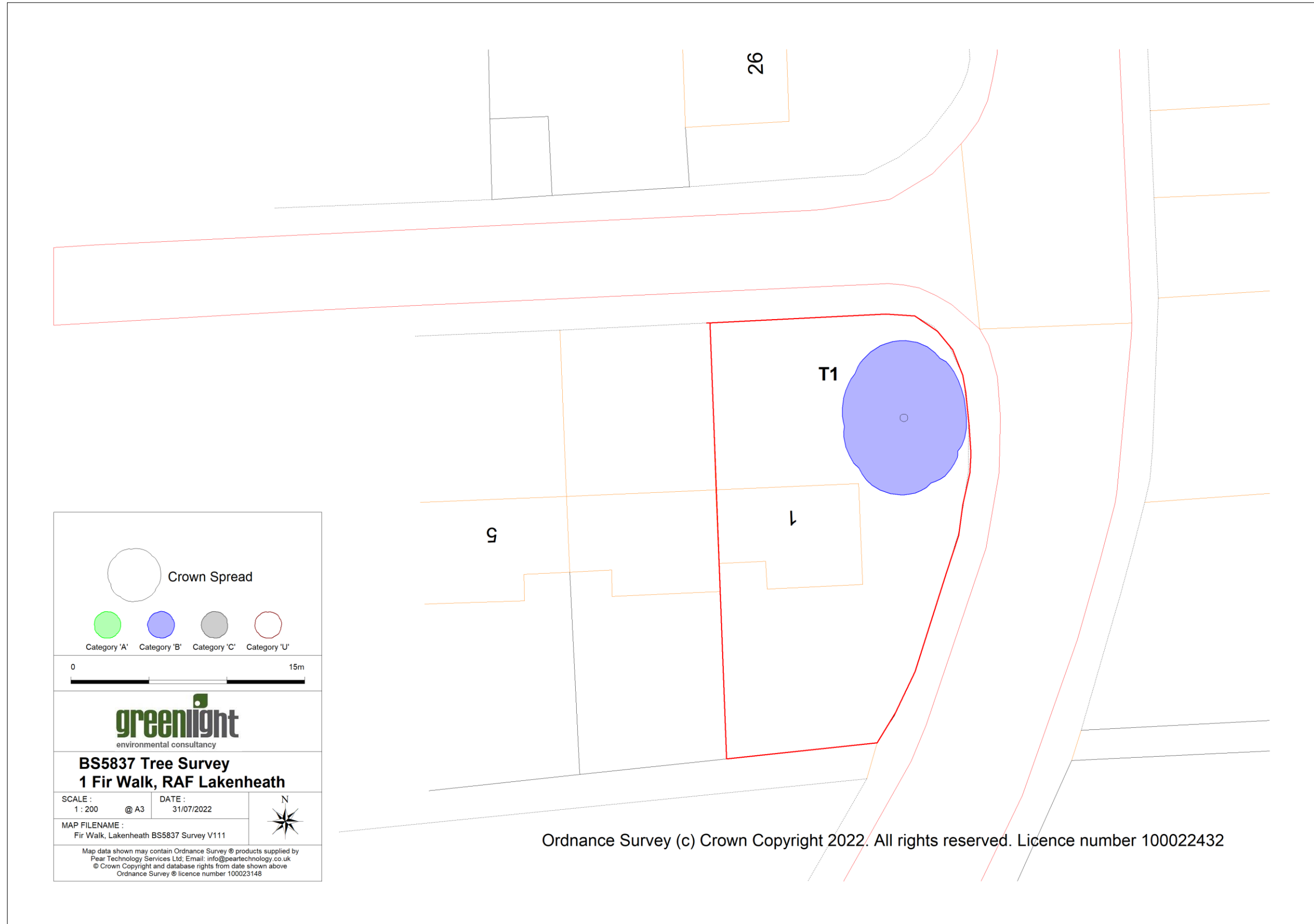


Figure 2: Tree Survey



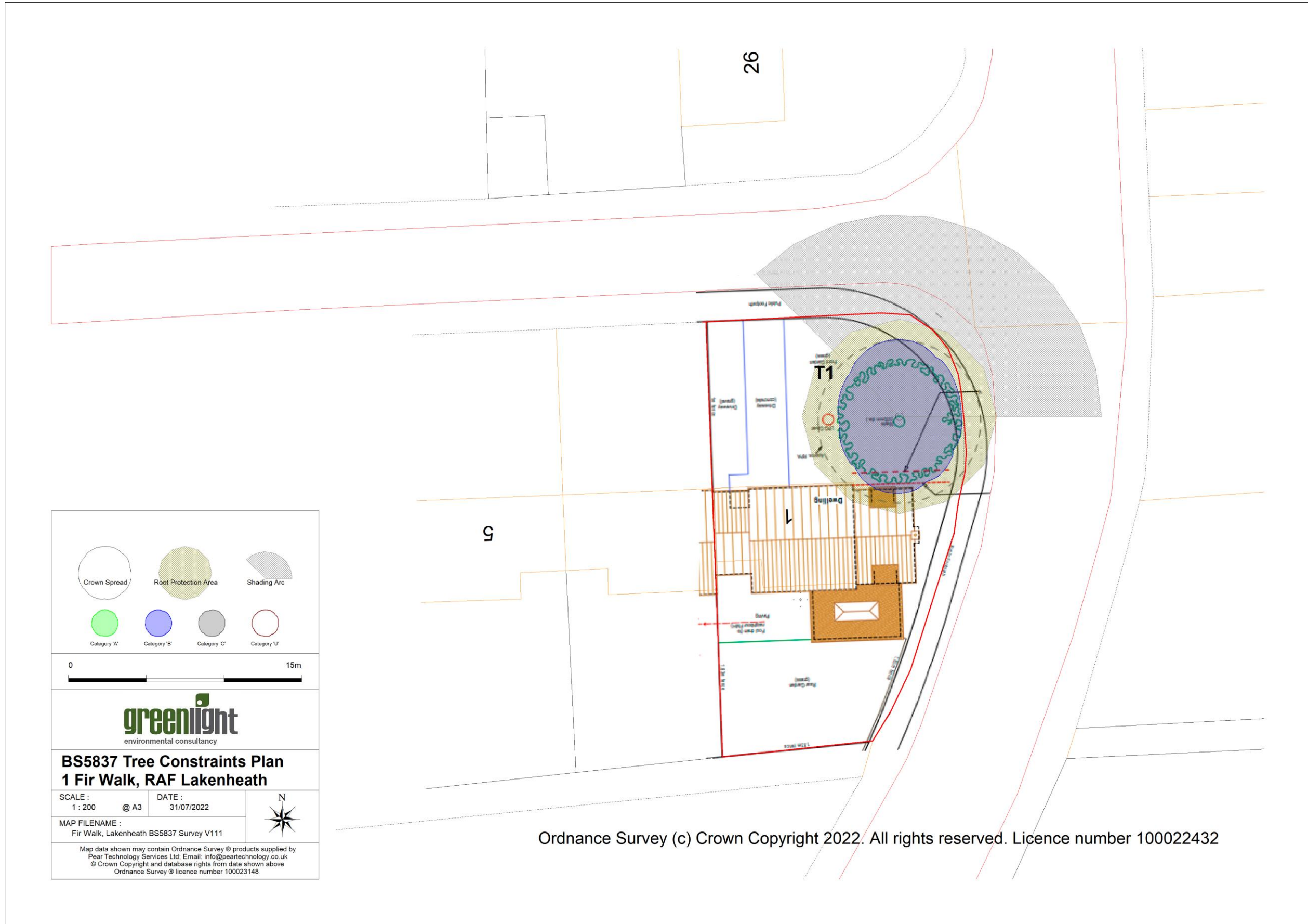


Figure 3: Tree Constraints Plan

## 5 ASSESSMENT OF ARBORICULTURAL IMPLICATIONS

- 5.1 The tree likely to be affected on the site is plotted on a plan shown in Figure 2 above with their quality assessment colour coded according to the grading categories stipulated in the British Standard (BS). A schedule of the detailed survey data is reproduced in a table at Appendix A
- 5.2 The tree is of good quality. It has been downgraded to category “B” due to several large dead limbs, damaged surface roots and past treatment due to its proximity to the dwelling which is likely to be repeated. The cascade chart for tree quality assessment from BS5837:2012 is reproduced in appendix D.
- 5.3 There is some below ground impact from the proposed development. The side extension encroaches into Root Protection Areas (RPA) of the tree. This encroachment extends to under 5% of the RPA, is just on one side and at the periphery. It is considered that the impact will be minor given that the tree is relatively young and a hardy species, tolerant of some disruption. Establishment of a Construction Exclusion Zone together with temporary ground protection and sensitive root pruning at the foundations will afford adequate mitigation.
- 5.4 There is already above ground conflict due to the proximity of the tree to the dwelling and this will be exacerbated by the construction of the side extension. There will be annual nuisance from falling tree debris and the risk of branches touching the structure requiring regular pruning.
- 5.5 The plot is well screened from the public road being surrounded by existing development and will cause little additional landscape impact.
- 5.6 Table 1 – Quality assessment of trees recorded in survey in accordance with BS5837:2012

	Trees	Groups	Hedges	TOTALS	To be removed
<b>Category U</b>	0	0	0	0	0
<b>Category A</b>	0	0	0	0	0
<b>Category B</b>	1	0	0	1	0
<b>Category C</b>	0	0	0	0	0
<b>TOTALS</b>	1	0	0	1	0

## **Tree Work**

- 5.7 The retained tree requires pruning to avoid the existing building and to rebalance the crown. The dead limbs should also be removed.
- 5.8 Any tree work should be undertaken to the standards set out in BS 3998:2010 British Standard Recommendations for Tree Work.

## **Tree and Root Protection – Constraints on Development**

- 5.9 The Tree Constraints Plan in Figure 3 shows the distance that construction should normally be kept away from retained trees to provide the Root Protection Area (RPA) recommended in BS 5837: 2012. Full protection of the RPAs should normally be reinforced by creating Construction Exclusion Zones through the erection of protective fencing constructed to at least a minimum standard as prescribed in BS 5837: 2012. This fencing should carry warning notices to prevent inadvertent encroachment. Since it is proposed to build within the RPA, it is impractical to fully exclude construction activity from the RPA. Those areas of the RPA outside the CEZ should be protected from ground compaction. The excavation of the foundations within the RPA should be dug by hand and any roots encountered should be cut cleanly with sharp tools to encourage swift healing and minimise opportunity for infection.
- 5.10 The tree protection plan in Appendix E provides an illustration of the location of the protective fencing and further general guidance on tree protection is provided in the arboricultural method statement in Appendix D.

## **6 CONCLUSIONS**

- 6.1 Recommended root protection areas are mapped in this report. No construction activities should take place within root protection areas, except as indicated in the method statement.
- 6.2 Based on the proposed tree constraints plan and recommended tree protection measures, we consider that development can be accommodated on this site with minimal impact on the arboricultural interest of the site.

## **7 BIBLIOGRAPHY**

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## Appendix A Tree Survey Detail

Tree ID	Common Name	Maturity	Height (m)	Height and direction of first significant branch (m)	Diam (mm) *	RPA radius (m)	RPA Area (m2)	Spread - N (m) ®	Spread - E (m)	Spread - S (m)	Spread - W (m)	Category	Sub category†	Life Expectancy	Phys Condition	Tree work recommendations
T1	Purple maple	Semi-mature	13	2 m N	510	6.1	118	5	4	5	4	B	1;2	>40yrs	Good	Remove dead wood and prune back from building

**Key** Age class: **Young** (1<sup>st</sup> qtr of life expectancy) **Semi-mature** (2<sup>nd</sup> qtr of life expectancy) **Early-mature** (3<sup>rd</sup> qtr of life expectancy) **Mature** (final qtr of life expectancy)

**Over mature** (beyond life expectancy and declining naturally)

**Veteran** (of great age for its species and possibly of conservation value)

\* derived measurement using protocols in BS5837

† Sub category "1" Arboricultural values, Sub category "2" Landscape values, Sub category "3" Cultural values

® Where only a northerly radial crown spread is given, the crown is assumed to be roughly circular

## Appendix B - Photographic record of selected trees



View of tree from road looking west



View of tree from road looking south





View of tree looking north



Front garden

## Appendix C - BS 5837:2012 Table 1 Cascade chart for tree quality assessment

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)		
<b>Trees unsuitable for retention (see Note)</b>			
<p>Category U</p> <p>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</p>	<ul style="list-style-type: none"> <li>✦ Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>✦ Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>✦ Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p><i>NOTE</i> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>		
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
<b>Trees to be considered for retention</b>			
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
<p>Category C</p> <p>Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm</p>	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value



## Appendix D

### ARBORICULTURAL METHOD STATEMENT

#### Land at 1 Fir Walk, RAF Lakenheath

##### Scope of the Works

1. The document provides a methodology for the protection of trees during the proposed development at the above site and should be read in conjunction with the Tree Protection Plan (TPP) in Appendix E and Timetable for Protection Works below.
2. The main features in the protection of the retained trees on site are as follows:
  - Provision of temporary protective barriers
  - Provision of temporary ground protection
  - Hand digging and root pruning
  - Protective measures must be in place prior to any ground or construction works take place.

##### Timing of Works

3. Tree protection works will be completed according to the timetable below.
4. The exact commencement date is yet to be decided, however, the timetable provides the order in which the works need to be implemented to ensure the trees are suitably protected and states when specific arboricultural input will be required.

Item	Operation	Before starting Works	During Construction Works	On Completion
1.	Carry out a pre-commencement site meeting to discuss any tree protection matters arising	X		
2.	Erect temporary protective fencing (thick pink line) on edge of the CEZ as specified in the AMS and TPP	X		
3.	Erect warning signs on fencing around each CEZ stating "Construction Exclusion Zone - Keep Out".	X		
4.	Provision of temporary ground protection	X		
5.	Maintain Protective fences and signs in good condition.		X	
6.	Remove protective fencing			X
7.	Check condition of the protected trees and consider if remedial works are necessary.			X

### Tree Protection Barriers

5. Retained trees will be protected by forming Construction Exclusion Zones (CEZ) as shown on the Tree Protection Plan.
6. Temporary barriers will be erected as shown by the thick pink lines on the TPP to form the Construction Exclusion Zone (CEZ). The barriers will consist of 2m tall welded mesh panels (Heras) supported on rubber or concrete feet. The fence panels should be joined together using a minimum of two anti-tamper couplers installed so they can be removed from the inside of the fence. The distance between couplers should be at least 1m and be uniform throughout the fence. Panels should be supported on the inner side by stabilizer struts which should normally be attached to a base plate and secured with ground pins. Where the fence will be erected on hard surfacing or it is otherwise unfeasible to use ground pins the struts should be mounted on a block tray.

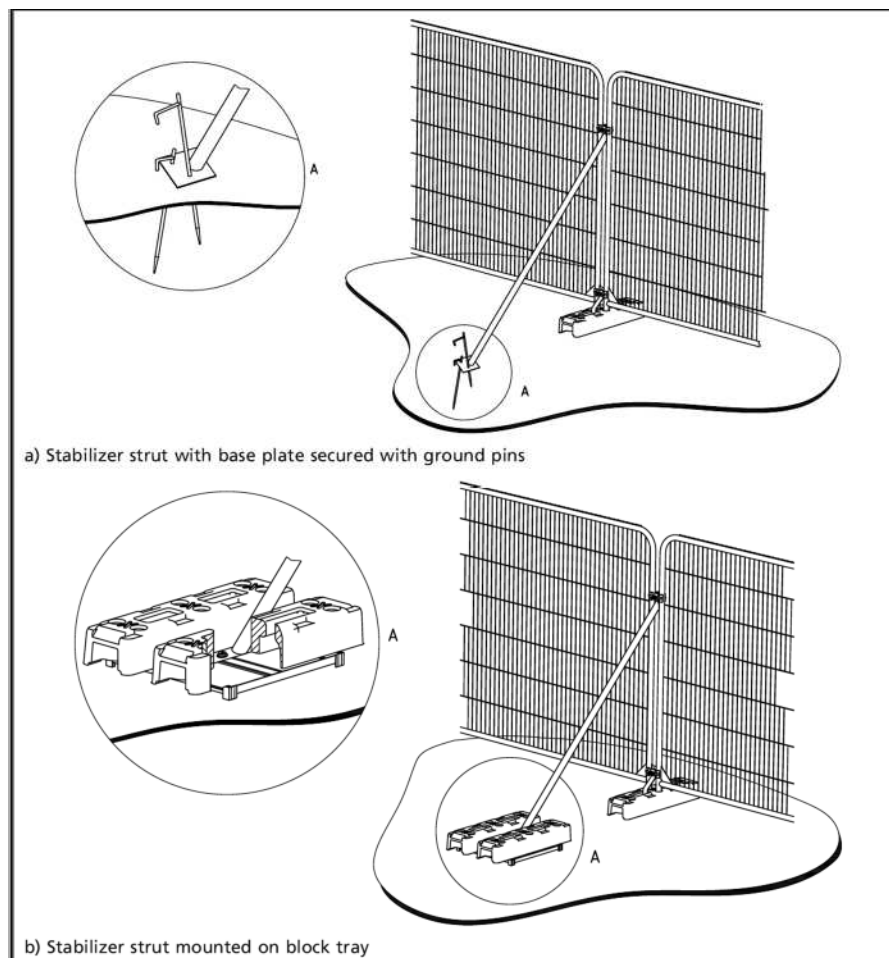


Fig 1: Temporary protective fencing as recommended by the British Standards (2012)

7. Notices should be erected on the barriers forming each CEZ stating “Construction Exclusion Zone – No Access “. These should face outwards towards the work area. Signs must be maintained in good condition and remain in place until completion of the works.
8. Barriers will be maintained throughout the duration of the works, ensuring that access is denied to the CEZ throughout the process.

### **Temporary Ground Protection**

9. Where it is impractical to exclude construction activity from the full extent of the RPA, protection of the RPA should be reinforced by the implementation of surface compaction protection to at least a minimum standard as prescribed in BS 5837: 2012 in the area shown on the Tree Protection Plan below.
10. Temporary ground protection during construction should be capable of supporting any traffic using the site without being distorted or causing compaction of the underlying soil.
  - for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
  - for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm 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 systems 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.

### **Hand Digging and Root Pruning**

11. Pre-emptive root pruning will take place just outside foundations of the new wall to minimise injurious damage to the root system of the neighbouring trees whilst excavating. The position of this work has been shown as a thick yellow line in Appendix E – TPP.
12. This will be carried out by excavating a trench, at most 500mm outside the line of the strip foundations within the area shown on the TPP, using hand tools or an airspade immediately adjacent to the trees. Any roots under 25mm in diameter found during this

excavation will be severed using a sharp handsaw or secateurs. This will ensure that the roots are not ripped or torn, and will have a good point from which to re-grow, and will have a chance to occlude and prevent fungal pathogens from entering. Any roots over this diameter will not be severed until advice has been sought from the arboricultural consultant. The trench is to be backfilled with good quality topsoil.

13. This work will be carried out by a suitably trained operative or under arboricultural supervision.

### **Storage Shipping Containers, Site Huts and Temporary Buildings**

14. All storage containers, site huts and temporary buildings will be sited outside the CEZ.

### **Additional Precautions**

15. The movement of plant in proximity to retained trees should be conducted under the supervision of a banksman to ensure adequate clearance from the branches of the trees. Hydraulic cranes, forklifts, excavators or piling rigs (other than small rigs used for mini piling) must be avoided in the immediate vicinity the crown of the trees.
16. Cement, oil, bitumen or any other products which spillage would be likely to be detrimental to tree growth should be stored well away from the outer edge of the RPA of retained trees. Precautions should include ensuring all toxic liquids are stored in fully bunded containers. Spill kits including absorbent materials must be available on site to deal with any accidental spillages that may occur.
17. Lighting of fires on site should be avoided. Where they are unavoidable they must be at such a distance from retained trees that there is no risk of the heat causing fire damage to the trunk or branches. Full account must be taken of wind direction. Fires must be attended at all times until they are completely extinguished.

### **Service Trenches**

18. No details of new service runs have been provided at this stage. They should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including micro-tunnelling, surface launched directional drilling, pipe ramming and impact moleing/thrust boring. It is important common ducts should be used where it is not possible to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning,

Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2).

This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging.

19. It will be necessary to prepare detailed plans for these services that should be produced in conjunction with an arboriculturist, and include allowance for the space needed for access for the installations, and the levels across the proposed area.
20. Any overground services including CCTV must also be positioned to avoid the need for any regular or detrimental pruning to the trees.

# Appendix E – Tree Protection Plan

