

SF3387 CMS Rockingham

ARBORICULTURAL SURVEY REPORT | BS 5837:2012

Revision C - February 2023

SMEEDEN FOREMAN

Landscape Architecture • Ecology • Arboriculture

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## Document Check Sheet

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Arboricultural  
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Professional Member

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## 1.0 Introduction

Smeeden Foreman Ltd has been appointed to undertake an arboricultural survey of trees at CMS Rockingham (see Figure 1).

The survey was undertaken on 25th January 2023 and was based upon topographical survey plan 3508-02-a produced by Ramowski Clarke Ltd. The trees have been surveyed in accordance with BS5837:2012. The limitations of survey techniques and analysis are included in Appendix A.

## 1.1 Site Description

The site is located to the north of Junction 36 of the M1 motorway (see Figure 1). Trees and hedges are mostly confined to the area adjacent to the western boundary.

## 1.2 Legal status of trees

The trees on site are not protected by a Tree Preservation Order, and the site is not situated within a Conservation Area (Digital mapping provided by Barnsley Council, accessed 26.01.2023).

Trees may be subject to legal protection under a range of legislation, which is aimed at wildlife and habitat protection, particularly nesting birds and bats.



Figure 1 – Location Plan

## 2.0 Aims and Methodology

### 2.1 Aims

The aims of the survey are to undertake a non-invasive survey of the identified trees and any trees which have the potential to be affected by future works within the vicinity. The Tree Constraints Plan shows the location and category of the surveyed trees.

### 2.2 Survey Methodology

The survey was carried out to British Standard 5837:2012 using the categories explained below:

- 2.2.1 The trees were assessed visually from ground level. Where potential problems were identified, further inspection by tree climbing is recommended. No digging or drilling methods were employed during this survey
- 2.2.2 The tree numbers or group numbers within the schedules refer to the order in which the trees were recorded and shown on the tree survey plan
- 2.2.3 The approximate height of each tree is measured from ground level to top of canopy using a clinometer;
- 2.2.4 The diameter of each tree is measured at 1.5m above ground level. Where a tree stem divides below 1.5m each stem is measured at 1.5m above ground level in accordance with Annex C of the British standard. The diameter of trees where the trunk was inaccessible have been estimated and marked as such within the schedules.
- 2.2.5 The age of each tree is based upon our experience and is divided into young, semi-mature, early-mature, mature, over-mature.
- 2.2.6 The water demand of each tree (As listed in table 12, appendix 4.2 – A, NHBC standard chapter 4.2) noted on or adjacent to the site is recorded. Shrinkable soils are subject to changes in volume as their moisture content is altered. Soil moisture content varies seasonally and is influenced by a number of factors including the action of tree roots. The resulting shrinkage or swelling of the soil can cause subsidence or heave damage to foundations, the structures they support or services.  
Engineers should consider the soil condition and the potential impact of the species of the trees/hedges on and adjacent to the site when preparing building/structure design.
- 2.2.7 The condition of the tree is based upon our experience and is an assessment of the health and vigour of the tree.
- 2.2.8 Estimated remaining contribution and category/rating of each tree is based on our experience;
- 2.2.9 The retention category of each tree or group of trees is based upon the information detailed above using the following categories:
- A Trees of high quality and estimated remaining life expectancy of at least 40 years (Light green on plan)
  - B Trees of moderate quality and estimated remaining life expectancy of at least 20 years (Mid blue on plan)
  - C Trees of low quality and estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm Grey on plan)
  - U Trees cannot realistically be retained as living trees in context of current land use for longer than 10 years (Dark red on plan)
- 2.2.10 The following subcategories have been used in rating tree value:
- 1 Mainly arboricultural value
  - 2 Mainly landscape value
  - 3 Mainly cultural values, including conservation

## 2.3 **Key to Survey Schedules**

<b>Tree no.</b>	Tree number as recorded on the plan: T1, T2 etc and for tree groups: G1, G2 etc. Hedges: H1, H2 etc. Woodland: W1, W2 etc.	
<b>Species</b>	Common name / Scientific name	
<b>Height</b>	Overall estimated height of the tree in metres (rounded up to the nearest metre for trees over 10m high).	
<b>Stem Dia</b>	Stem diameter measured in millimetres at 1.5m above ground (on sloping ground measured on the upslope of the stem) in accordance with Annex C of BS5837:2012.	
<b>Branch spread</b>	Measured in metres (rounded up to the nearest half metre) along the four cardinal points: north, east, south and west to derive an accurate representation of the crown.	
<b>Ht crown clearance</b>	The existing height, measured in metres, above ground level of: the first significant branch and direction of growth and the canopy.	
<b>Age class:</b>		
<b>Young (Y)</b>	Recently planted or establishing tree. Typified by vigorous growth and distinct apical dominance (definite, discernible leader).	
<b>Semi-mature (SM)</b>	A tree in its first third of life span. Tree that has not reached its ultimate potential height. Phase includes considerable girth thickening and the start of crown spreading.	
<b>Early mature (EM)</b>	A tree in its second third of life span. A tree that is reaching its ultimate potential height. The growth rate is slowing down but the tree, will still increase in stem diameter and crown spread.	
<b>Mature (M)</b>	A tree in its final third of life span. The tree has attained its largest proportions and has reached its ultimate height. The tree is typified by thicker bark plates and a large spreading crown.	
<b>Over-mature (OM)</b>	The tree has attained its maximum height and growth rate slows considerably. Characterised by the loss of large limbs, large amounts of deadwood and decay. Limited safe life expectancy.	
<b>Water Demand</b>	High, Moderate, Low (As listed in table 12, appendix 4.2 – A, NHBC standard chapter 4.2)	
<b>Physiological condition</b>	Good (G), fair (F), poor (P), dead (D).	
<b>Comments</b>	Overall form of tree, presence of any decay, any physical defects and observations	
<b>Preliminary Management Recommendations</b>	Including any further investigations required, wildlife habitat potential, management or pruning works.	
<b>ERC</b>	The estimated remaining contribution measured in years: <10, 10+, 20+, 20-30+, 40+	
<b>Cat</b>	Category U or A to C grading as defined in Table 1 BS 5837: 2012	
<b>RPA</b>	Root protection area measured in square metres, calculated according to BS 5837:2012	
<b>Other abbreviations used:</b>	<b>N</b>	North
	<b>S</b>	South
	<b>E</b>	East
	<b>W</b>	West
	<b>GL</b>	Ground level
	<b>OSB</b>	Outside site boundary
	<b>MS</b>	Multi-stemmed
	<b>#</b>	Estimate
	<b>NWR</b>	No work required
	<b>NVD</b>	No visible defects

### 3.0 Tree Survey Schedules

Tree No.	Species	Top Height (crown height) m	Branch Spread (m)				Stem Dia. (mm)	Age Class	Water Demand	Condition	Comments	ERC (years)	Recommendations	Category
			N	E	S	W								
T1	Sorbus aucuparia (Rowan)	5(2)	3	2	3	2	100	EM	M	Fair	OSB. Limited inspection. Suckers around stem base. Multiple stems at ground level. Moderate deadwood. Crown distorted due to group pressure.	10+	Remove ground suckers.	C2
T2	Alnus cordata (Italian Alder)	16(3)	6	5.5	4	5.5	400	M	M	Good	OSB. Limited inspection. Crown lifted- occluding pruning scars.	20+	No works required.	B2
T3	Alnus cordata (Italian Alder)	14(4)	5	5	4	5	350	M	M	Good	OSB. Limited inspection. Stem divides at ground level. Included bark present in fork. Crown lifted- occluding pruning scars.	20+	No works required.	B2
T4	Sorbus aucuparia (Rowan)	4(2)	2	3	2	3	100,75,75	EM	M	Fair	OSB. Limited inspection. Suckers around stem base. Multiple stems at ground level. Crown distorted due to group pressure.	10+	Remove ground suckers.	C2
T5	Fraxinus excelsior (Ash)	14(4)	5.5	5.5	5.5	5.5	350	EM	M	Good	OSB. Limited inspection. Crown lifted- occluding pruning scars.	10+	Reinspect for ash dieback in summer.	C2
T6	Fraxinus excelsior (Ash)	12(4)	4	4	4	4	350	EM	M	Good	OSB. Limited inspection. Crown lifted- occluding pruning scars.	10+	Reinspect for ash dieback in summer.	C2

Tree No.	Species	Top Height (crown height) m	Branch Spread (m)				Stem Dia. (mm)	Age Class	Water Demand	Condition	Comments	ERC (years)	Recommendations	Category
			N	E	S	W								
T7	Acer platanoides (Norway Maple)	8(4)	3	3	3	3	200	SM	M	Fair	OSB. Limited inspection. Stem divides above 1.5m. Tension fork above 1.5m. Included bark present in fork. Crown distorted due to group pressure. Crown lifted - occluding pruning scars.	10+	No works required.	C2
T8	Sorbus aria (Whitebeam)	8(2)	4	4	4	4	300	M	M	Good	OSB. Limited inspection. Stem divides above 1.5m. Epicormics on stem. Compression fork above 1.5m. Included bark present in fork. Crown distorted due to group pressure. Crown lifted- occluding pruning scars. Trunk growing against fence.	20+	No works required.	B2
T9	Acer platanoides (Norway Maple)	12(3)	3	3	1	3	250	EM	M	Fair	OSB. Limited inspection. Stem divides above 1.5m. Tension fork above 1.5m. Included bark present in fork. Crown distorted due to group pressure. Crown lifted - occluding pruning scars.	10+	No works required.	C2
T10	Acer platanoides (Norway Maple)	12(4)	5	5	5	5	300	EM	M	Good	OSB. Limited inspection. Stem divides above 1.5m. Tension fork above 1.5m. Crown lifted- occluding pruning scars.	20+	No works required.	B2

Tree No.	Species	Top Height (crown height) m	Branch Spread (m)				Stem Dia. (mm)	Age Class	Water Demand	Condition	Comments	ERC (years)	Recommendations	Category
			N	E	S	W								
T11	Acer platanoides (Norway Maple)	12(3)	1	4	4	4	250	EM	M	Fair	OSB. Limited inspection. Squirrel damage in crown. Crown lifted- occluding pruning scars.	10+	No works required.	C2
T12	Acer platanoides (Norway Maple)	12(2)	5.5	5.5	3	5.5	300	EM	M	Fair	OSB. Limited inspection. Stem divides above 1.5m. Compression fork above 1.5m. Included bark present in fork. Natural bracing above fork. Crown distorted due to group pressure. Crown lifted- occluding pruning scars.	20+	No works required.	B2
T13	Fraxinus excelsior (Ash)	12(5)	4	4	5	5	300	EM	M	Fair	OSB. Limited inspection. Crown lifted- occluding pruning scars.	10+	Reinspect for ash dieback in summer.	C2
T14	Acer campestre (Field Maple)	6(3)	3	3	3	1	200	EM	M	Fair	OSB. Limited inspection. Crown lifted- occluding pruning scars.	20+	No works required.	B2
G15	Crataegus monogyna (Hawthorn)	4(0.5)	3	3	3	3	100	SM	H	Fair	Multiple stems at ground level.	10+	Removal.	C2
T16	Fraxinus excelsior (Ash)	7(3)	3	3	3	3	150	SM	M	Fair	OSB. Limited inspection. Leaning East. Crown lifted- occluding pruning scars.	10+	No works required.	C2
T18	Ulmus glabra (Wych Elm)	6(3)	4	4	4	4	100	SM	H	Dead	Dead.	<10	Removal.	U

Tree No.	Species	Top Height (crown height) m	Branch Spread (m)				Stem Dia. (mm)	Age Class	Water Demand	Condition	Comments	ERC (years)	Recommendations	Category
			N	E	S	W								
T20	Ulmus glabra (Wych Elm)	6(3)	4	4	4	4	100	SM	H	Dead	Dead. Leaning East.	<10	Removal.	U
T21	Ulmus glabra (Wych Elm)	6(3)	4	4	4	4	150	SM	H	Dead	Dead. Leaning South. Multiple stems at ground level.	<10	Removal.	U
G22	Fraxinus excelsior (Ash)	7(1)	2	2	2	2	100	SM	M	Fair	Spindly.	10+	Removal.	C2
T24	Fraxinus excelsior (Ash)	16(5)	6.5	6.5	6.5	6.5	850	M	M	Fair	Tree causing structural damage to wall. Rubble tipped in RPA. Decay present on stem. Cavity on stem. Dieback in crown. Major deadwood in crown.	<10	Removal.	U
G25	Fraxinus excelsior (Ash)	12(5)	3	6	1	3	200	SM	M	Fair	OSB. Limited inspection. Row of self-seeded trees. One tree has snapped at base, resting in canopy of neighbour. One tree leans over the site. Spindly. Suckers around stem base.	10+	Removal.	C2
T27	Betula pendula (Silver Birch)	7(0)	3	3	3	3	200	EM	L	Good	OSB. Limited inspection. Exudation on stem. Broken branches in crown.	20+	No works required.	B2

### 3.2 Hedges

<b>Hedge No.</b>	<b>Species</b>	<b>Height (m)</b>	<b>Water Demand</b>	<b>Physiological condition</b>	<b>Recommendations</b>
H17	Crataegus monogyna (Hawthorn)	4	H	Good	Removal.
H19	Crataegus monogyna (Hawthorn)	4	H	Good	Removal.
H23	Crataegus monogyna (Hawthorn)	4	H	Good	Removal.
H26	Corylus avellana (Hazel),Crataegus monogyna (Hawthorn),Prunus spinosa (Blackthorn),Fraxinus excelsior (Ash)	3	H	Good	Removal.

#### **4.0 Above Ground Constraints**

- 4.1 The potential for retaining trees on a development site includes the extent of the influence of the tree at the time of survey. Consideration is also given to the effects of future growth within the context of the proposed development. In addition, the potential nuisance caused by shading to new buildings both after construction and also once trees reach their ultimate size is also considered.
- 4.2 The extent to which a tree may represent a constraint to development will depend both upon the location of the trunk and size and nature of the canopy and also the extent of the roots below ground. The tree constraints drawing (SF3387 TS01) plots the location and extent of the tree above ground.

#### **5.0 Below Ground Constraints**

- 5.1 The Root Protection Area (RPA) represents a potential constraint to development which may be modified in pattern, although not overall area, by existing site conditions such as structures and surfaces, soil types and drainage, and an appreciation of the nature of particular tree species and root morphology.
- 5.2 Within the tree root protection area there should be a presumption against excavation, excess vehicular or pedestrian movement, storage of materials, construction, or changes in ground level unless consideration is given to the potential effects on the tree to be retained and the efficacy of any construction techniques designed to reduce adverse effects on the tree.
- 5.3 The tree constraints drawing (SF3387 TS01) plots the location and extent of the tree below ground through application of the calculation provided in section 4.6 of the BS5837:2012 Trees in relation to design demolition and construction – Recommendations.

## 6.0 Arboricultural Impact Assessment

6.1 The proposed development produced by William Saunders has been assessed in relation to the existing trees on drawing SF3387 AIA01 (Appendix C).

### 6.2 *Summary of proposed tree removal to facilitate development*

Tree No.	Species	Proposed Works	Category
G15	Hawthorn	Removal	C2
H17	Hawthorn	Removal	-
H19	Hawthorn	Removal	-
G22	Ash	Removal	C2
H23	Hawthorn	Removal	-
G25	Ash	Removal	C2
H26	Mixed	Removal	-

### 6.3 *Summary of proposed tree removal due to poor condition*

Tree No.	Species	Proposed Works	Category
T18	Elm	Remove dead tree	U
T20	Elm	Remove dead tree	U
T21	Elm	Remove dead tree	U
T24	Ash	Remove- poor condition	U

## 6.4 *Tree Works*

6.4.1 All tree works recommend within this report shall be carried out to existing trees on site and shall be in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Local Authority.

6.4.2 The Tree Surgeon shall be chosen from The Arboricultural Association's Approved Contractor list and all work shall be undertaken at the appropriate time and with the consent and approval of the Site Agent who shall approve a programme of work.

## 6.5 *New tree planting*

6.5.1 The removal of trees will be mitigated with new tree planting, as indicated on drawing SF3387 LL01. Appropriate species selection will take account of the mature tree sizes and existing available space and site conditions. This will ensure new tree planting will successfully establish and will have sufficient space (above and below ground) and light requirements to attain a full term healthy life.

## 6.6 *Tree Protection*

6.6.1 The overhanging branches of trees T1 to T13 will be protected by tree protection fencing. The fencing may be temporarily adjusted to facilitate the construction of the car parking and bin storage areas.

6.6.2 The proposed parking bays will be constructed using Terram Geocell (or similar approved) Cellular Confinement System with type 3 stone, in no dig root protection area.

## **APPENDIX A**

### **Tree survey to BS 5837:2012 -Trees in relation to design demolition and construction limitation notes**

This survey to BS 5837:2012 is a visual assessment undertaken from ground level without any physical investigation and should be regarded as a preliminary overview of the trees on site. 'This term [visual] describes a general approach to tree surveying using visual observation and recording, combined with experience and knowledge of tree biology and structure to draw conclusions about tree condition'p8[1]

Observations on structural condition, preliminary management recommendations, (e.g. pruning ) and the estimated remaining contribution are based on visual indicators present at the time of inspection (i.e. a single point in time).

It should be noted that numerous potential defects may not be detectable dependent upon timing of inspection, in particular wood decay fungi which may only occasionally produce external fruitifications or may not provide external symptoms until an advanced state of invasion is achieved.

Trees are long lived organisms with a significant proportion of growth below ground, (in addition to what is evident above ground) that naturally lose branches and may potentially fail in many ways.

#### **Risk Assessments**

Whilst hazards may be identified in this document e.g. a defect 'that may cause harm'. The risk, (i.e. 'the chance high or low) that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be' is not assessed. [2]

Requirements for ongoing inspections (to monitor observed defects) and risk assessments will be suggested as necessary in the body of the report. The level and frequency of assessment required (in line with HSE advice) will depend on a range of factors for example 'the frequency of public access to the tree' p4 [3]. A balanced and proportionate approach to tree safety management is advocated in the National Tree Safety Group publication 'Common sense risk management of trees'. [4]

The health, (condition) and resulting safety of trees for a risk assessment should be checked on a cyclical basis, alternating between early and late seasons to ensure a full picture of the trees current health is established. Therefore the assessment of risk that trees present on a particular site would be additional to the scope of this BS 5837:2012 tree survey.

#### **Arboricultural Impact Assessments, Tree Protection Plans, Method Statements, Tree Management Plans**

These items are additional services identified relating to design demolition and construction in BS5837:2012 which may form part of a strategy to manage risks.

#### **NHBC Guidelines**

The technical requirements of the National House Building Council Chapter 4.2 Building near trees are not fully met under the requirements of BS BS5837:2012 in relation to shrinkable soils and 'vegetation surveys' (which include hedgerows and shrubs.). p4 [5]

#### References/ Further reading

[1] The Arboricultural Association Guidance Note 7 Tree Surveys: A Guide to good Practice.

[2] Health and Safety Executive Guidance <http://www.hse.gov.uk/risk/risk-assessment.htm>

[3] HSE guidance on Tree Management SIM01/2007/05 Management of the risk from falling trees or branches.

[4] National Tree Safety Group Guidance – Common Sense Risk Management of Trees.

[5] National House Building Council Chapter 4.2 Building near trees (Part 4 Foundations).

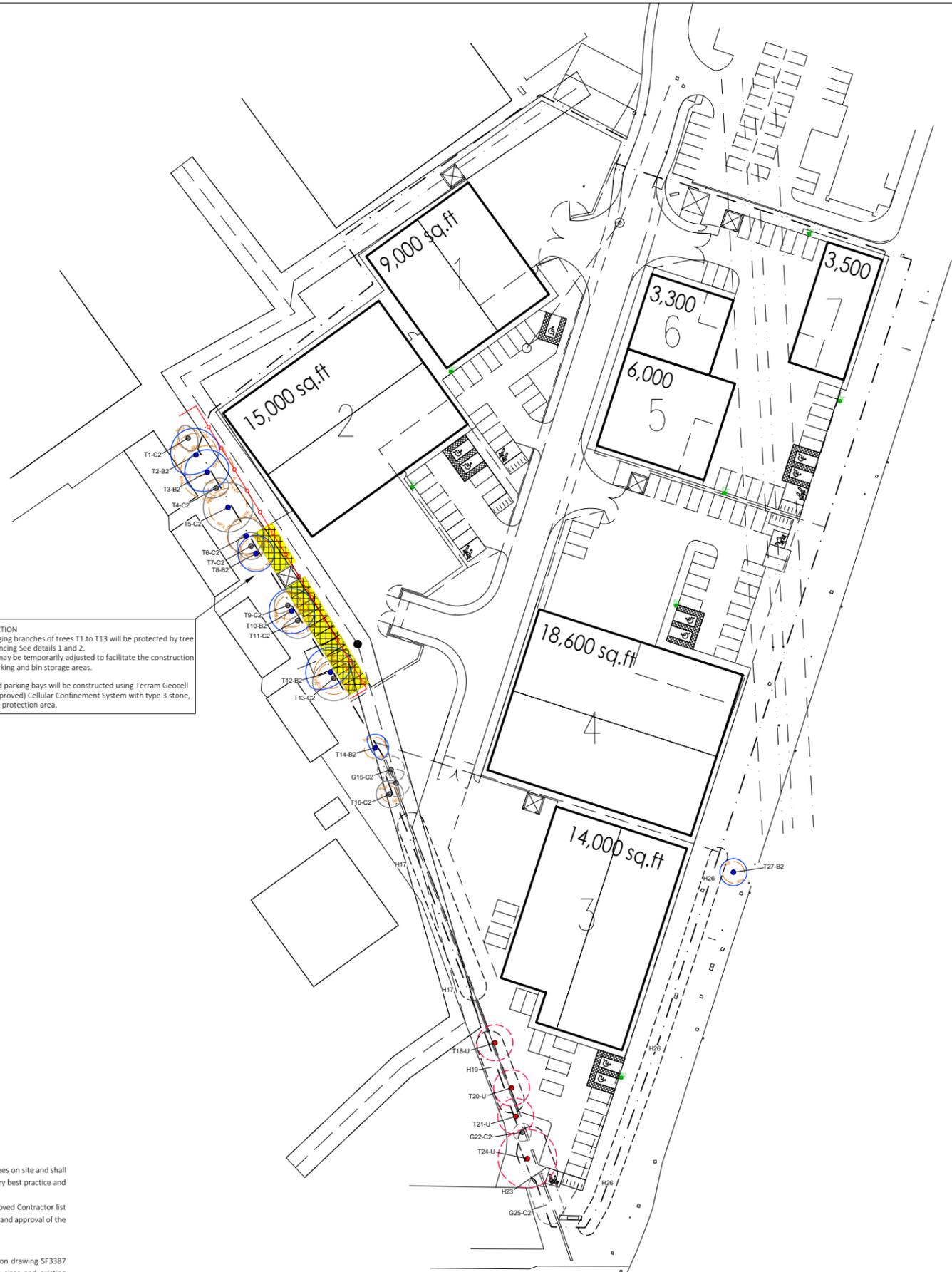
**APPENDIX B**

SF3387 TS01 Tree Survey Plan



**APPENDIX C**

SF3387 AIA01 Arboricultural Impact Assessment Plan



**TREE PROTECTION**  
The overhanging branches of trees T1 to T13 will be protected by tree protection fencing. See details 1 and 2.  
The fencing may be temporarily adjusted to facilitate the construction of the car parking and bin storage areas.  
The proposed parking bays will be constructed using Terram Geocell (or similar approved) Cellular Confinement System with type 3 stone, in no dig root protection area.

**Summary of proposed tree removal to facilitate development**

Tree No.	Species	Proposed Works	Category
G15	Hawthorn	Removal	C2
H17	Hawthorn	Removal	-
H19	Hawthorn	Removal	-
G22	Ash	Removal	C2
H23	Hawthorn	Removal	-
G25	Ash	Removal	C2
H26	Mixed	Removal	-

**Summary of proposed tree removal due to poor condition**

Tree No.	Species	Proposed Works	Category
T18	Elm	Remove dead tree	U
T20	Elm	Remove dead tree	U
T21	Elm	Remove dead tree	U
T24	Ash	Remove - poor condition	U

**Tree Works**  
All tree works recommend within this report shall be carried out to existing trees on site and shall be in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Local Authority.  
The Tree Surgeon shall be chosen from The Arboricultural Association's Approved Contractor list and all work shall be undertaken at the appropriate time and with the consent and approval of the Site Agent who shall approve a programme of work.

**New tree planting**  
The removal of trees will be mitigated with new tree planting, as indicated on drawing SF3387 L101. Appropriate species selection will take account of the mature tree sizes and existing available space and site conditions. This will ensure new tree planting will successfully establish

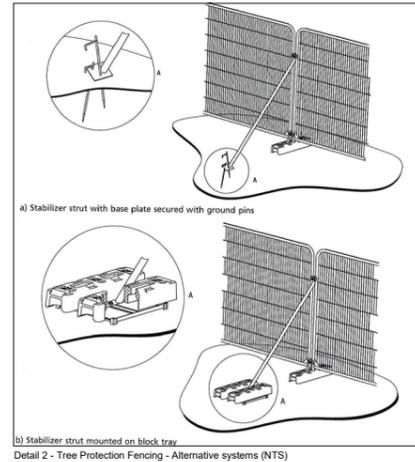
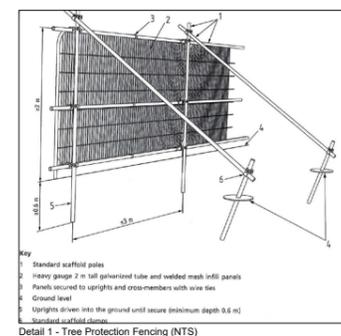
**ARBORICULTURAL METHOD STATEMENT**  
**TREE PROTECTION FENCING**

Tree protection fencing must be installed in the position as shown on the Tree Protection Plan before any other works on site can be undertaken.

Tree Protection Fencing should be set out as per Section 6.2 of BS5837: 2012 and will comprise a scaffold framework, consisting of vertical and horizontal scaffolds with vertical tubes spaced at a maximum of 3m intervals and driven securely into the ground. Weld mesh (Heras or similar) panels will be securely fixed on to this framework with scaffold clamps. Tubes will be firmed into holes in the ground made with post hole boring equipment. Bracing poles will be fixed to the inside of the barrier to ensure maximum rigidity, and should be located to avoid contact with structural roots.

See Detail 1 for details of the protective fencing to be employed in all circumstances, where existing site conditions allow. Fencing is to be erected as shown on the drawing. All fencing must be fixed in position with driven scaffold poles so that they cannot be moved during the construction period.

All-weather notices, A4 size, shall be attached to the tree protection fencing every 10m at 1.5m high with the words: 'Tree Protection Fence—strictly no access'.



**Key**

- Existing hedge
- Proposed hedge removal
- Tree retention category A**  
High quality with an estimated life expectancy of at least 40 years
- Tree retention category B**  
Moderate quality with an estimated life expectancy of at least 20 years
- Tree retention category C**  
Low quality with an estimated life expectancy of at least 10 years, OR young tree with a stem diameter below 150mm
- Tree category U**  
Poor condition with an estimated life expectancy of less than 10 years
- RPA**  
minimum Root Protection Area
- Proposed tree removal**  
To facilitate development
- Proposed tree removal**  
Due to poor condition
- Tree protection fencing**  
see Detail 1 and method statement
- No Dig Root Protection Area  
The proposed parking bays will be constructed using Terram Geocell (or similar approved) Cellular Confinement System with type 3 stone.

Trees have been surveyed and categorized as per the recommendations and guidance in BS 5837:2012 Trees in relation to design, demolition and construction.

This drawing is to be read in conjunction with the Arboricultural Survey report.

This drawing is to be reproduced in colour.

**FOR INFORMATION**

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B	21.02.23	Amended to client comments	DR	MS
A	17.02.23	Revised layout	DR	MS

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**Project** CMS Rockingham

**Title** Arboricultural Impact Assessment Plan

<b>Project No.</b> SF 3387	<b>Drawing No.</b> AIA01	<b>Rev.</b> B
<b>Scale</b> 1:500 @ A1	<b>Date</b> 31.01.23	
<b>Drawn by</b> DR	<b>Checked by</b> MS	

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