ARBORICULTURAL METHOD STATEMENT to BS 5837:2012 at at Kirk Mill Malt Kiln Brow Chipping Near Clitheroe Lancashire

Client:
53n Bowland Limited

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JCA Ref:
10633-B/AJB

JCA Limited

Arboricultural Consultants

Contents

1. Introduction

1.1 Purpose of the Method Statement

1.1.1 This Method Statement has been prepared to ensure good practice in the protection of trees during the proposed development at **Kirk Mill, Chipping, near Clitheroe**.

1.2 Terms of Reference

1.2.1 We are instructed by **53N Bowland Ltd.** to prepare a Method Statement for the proposed development, based on our arboricultural report dated the 23rd of May 2012 (JCA Ref: 10633-A/AJB). This survey and report conforms to the most recent specifications outlined in BS 5837: 2012 *Trees in relation to design, demolition and construction - Recommendations*.

1.2.2 It is proposed to demolish several buildings, restore the existing Kirk Mill and build a series of new buildings along with ancillary features which include car parking and areas of landscaping.

1.2.3 A new cricket pitch and pavilion is also proposed for an area located to the southeast of the Kirk Mill site.

1.2.4 The development layout has been provided by our client and is the basis for the Tree Protection Plan at **Appendix 5**.

1.2.5 Please note that the layout which was provided by our client showed an extensive tree planting scheme for the site, however, for the purposes of this report this has been omitted from the plan.

1.3 Status of the Method Statement

1.3.1 This Method Statement should be included as part of the specification and schedule of works issued to the building contractor, and can form part of the contract.

1.3.2 This Method Statement should be available on site for inspection by the local authority, contractors and other relevant persons.

2. Tree Works Prior, During and Post Construction

2.1 Tree Works Prior to Construction

2.1.1 Prior to any construction activity, the first operation on site will be the undertaking of the necessary arboricultural works, as described at **Appendix 1**.

2.1.2 The tree works include:

- the removal of **T1, T15, T23, G35, T50, T51, G66, T87** and **T88** and the pruning of **T17, G22, T41, T48, G60, T78** and **T85**, for arboricultural reasons
- the removal of **T16**, **T24, T25, T26, T27, T28, T29, T52, G53, T74, T75, T76, T77** and a section of **G63** (as highlighted in red on the Tree Protection Plan at **Appendix 5**) to facilitate the proposed development.

2.2 Tree Works During Construction

2.2.1 Damage to trees during the construction phase should be entirely prevented by the erection of a temporary protective barrier, to create a Construction Exclusion Zone (CEZ). All persons on site must be aware of limitations that apply within the CEZ (please refer to **Section 3.1.3**).

2.2.2 If any trees on site are damaged, it should be immediately reported to JCA to agree on appropriate remedial action. Contact numbers for all parties can be found at **Section 7**.

2.3 Tree Works Post Construction

2.3.1 When the construction phase is complete and when the protective barrier has been removed some minor remedial works may be required. This may be for aesthetic purposes; to give clearance for new paths or to provide ground clearance for landscaping schemes.

2.3.2 No post construction remedial works are to be carried out on the trees until prior permission has been granted by the Local Planning Authority.

2.4 Recommendations for Tree Works

2.4.1 All work must be to BS 3998: 2010 - *Recommendations for tree work* and should be carried out by qualified, experienced and, ideally, Arboricultural Association approved contractors who should be adequately insured.

2.4.2 Any defects seen by a contractor or the client that were not apparent to the consultant must be brought to the attention of JCA immediately.

2.4.3 No liability can be accepted by JCA in respect of the trees unless the recommendations of this Method Statement are carried out under our supervision.

3. The Protective Barrier Prior, During and Post Construction

3.1 Protective Barrier Prior to Construction

3.1.1 The installation of the temporary protective barrier will be the very first job to be undertaken on site following completion of the tree works.

3.1.2 No other work, including soil stripping, excavation, or the bringing onto site of materials or machinery, shall commence until the barrier is installed and inspected. In exceptional circumstances, where construction activity is deemed necessary, a representative from JCA may be informed so that they may be present to oversee such operations.

3.1.3 The protective barrier must be constructed in accordance with BS 5837: 2012 *Trees in relation to design, demolition and construction - Recommendations* and should be located as shown on the Tree Protection Plan at **Appendix 5**. Where possible, the protective barrier will enclose the entire Root Protection Area (RPA) of the trees to make a Construction Exclusion Zone (CEZ); **this area is to be considered a restricted area; no pedestrians, vehicles, storage of materials, equipment or machinery are allowed within the CEZ unless specified within this Method Statement**.

3.1.4 The protective barrier will be appropriate to the degree and proximity of likely construction works. The default specifications of BS 5837: 2012 recommends a vertical and horizontal, scaffold framework, well braced to resist impacts. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground, taking care to avoid underground services and structural roots. Finally, weld mesh panels are to be securely fixed on the scaffold framework. Please refer to **Appendix 2** for protective barrier details.

3.1.5 Once the barrier is installed, waterproof signs with the sentence '*Protected tree zone, no storage or operations within this are*a' are to be placed at 3m intervals to ensure that all personnel are aware of the restrictions that apply to the cordoned off area. A prepared sign is available at **Appendix 2**.

3.1.6 No work shall commence until the Local Planning Authority or JCA are satisfied that the protective barrier meets all requirements and gives the go ahead for construction to commence.

3.1.7 Where it is not possible to enclose the entire RPA of a tree with the protective barrier, it will be necessary to lay appropriate ground protection (please refer to **Section 4.1**).

3.2 Protective Barrier During Construction

3.2.1 No operations shall take place which require the removal of part of the protective barrier without prior agreement with the Local Planning Authority or JCA.

3.2.2 The protective barrier must be inspected for faults or damage by the site manager or other responsible named person on a regular basis and a written record kept. Any faults or defects must be repaired or replaced as soon as is reasonably practicable. Relevant contact details can be found at **Section 7**.

3.3 Removal of the Protective Barrier

3.3.1 When the development phase is complete and the main site machinery has been removed, the Local Planning Authority should be invited to inspect the site to give approval for the removal of protective barrier.

3.3.2 When this approval has been given the protective barrier may be dismantled and removed from site.

3.3.3 It should be noted the same restrictions apply to all RPAs as the CEZ (please refer to **Section 3.1.3**).

4. Construction Phase

4.1 Ground Protection

4.1.1 On this occasion it is not possible to enclose the entire RPA of **G22, T78** and **T82** with protective barrier and therefore ground protection is required in order to avoid possible root damage or the compaction of the soils by site traffic (including vehicles, machinery and pedestrians).

4.1.2 Where vehicles and machinery are likely to pass over the RPAs, robust ground protection which will distribute the vehicle and machinery weight is to be laid. This will take the form of interlinking, non-slip metal road plates, placed on top of crushed, bedded down, sandstone.

4.1.3 For pedestrian only routes, a less robust but adequate rigid surface is required to be laid. This will take the form wooden boards placed on top of woodchip (100mm in depth).

4.2 Demolition Works

4.2.1 No demolition works are known to be required within the root protection area of any retained tree on site.

4.3 Ground Level Changes

4.3.1 No ground level changes are required within the vicinity of any RPA of any tree on site.

4.4 Exposed Roots

4.4.1 Any tree roots exposed within the RPA must be left as intact as careful digging with hand tools will allow. Roots can become desiccated quickly and must therefore be covered with a dry cloth, to prevent freezing overnight, or a wet cloth on warm days.

4.4.2 If roots are to be severed then clean, straight cuts must be made, in order to minimise the extent of wounding. If roots with a diameter of greater than 50mm are encountered, then a representative from JCA must first be informed before any further work is undertaken.

4.5 Construction of Hard Surfaces

4.5.1 A hard surface, in the form of a car parking area, is proposed within the RPA of **G22** and **T78**.

4.5.2 It is recommended that for **G22** and **T78** a no-dig method of construction be utilised.

4.5.3 The finished surface must be porous in order to allow air and water to reach the tree roots, whilst at the same time being able to withstand the load applied.

4.5.4 To lay hard surfaces within the RPAs of the retained trees without causing damage:

- No excavations will take place within the RPAs of the retained trees.
- A cellular confinement system will be used.
- The cellular confinement system will be filled with a no-fines granular material no less than 150mm deep for the vehicular access road and no less than 100mm deep for the pedestrian footpaths.
- The finished surface must be porous.
- The edging will comprise of driven stakes or laid sleepers.

4.5.5 Please refer to **Appendix 4** for example construction guidelines and a supporting diagram.

4.6 Laying of the New Cricket Pitch

4.6.1 The proposed cricket pitch encroaches into the RPA of **T82**. However, due to the nature of the proposals, this will not be detrimental to **T82**.

4.7 Construction of New Buildings

4.7.1 The new buildings are to be constructed outside the root protection area of all retained trees on site.

4.8 Excavations and Services

4.8.1 Drainage and utilities are to be directed away from trees. Where this is not possible guidance and methodologies on the installation of underground services whilst minimising damage to tree roots is provided at **Appendix 3**.

4.9 Location of the Site Compound

4.9.1 It is vital that the site compound that typically includes the site office, mess facilities, toilets, storage of materials and parking, is located away from trees. Care must also be taken to prevent contamination with chemical spillages, including petrol, diesel and oils. Cement mixers and toxic materials should not be permitted close to trees.

5. Post Construction Phase

5.1 Completion Meeting

5.1.1 Upon completion of the works as specified in **Section 4**, a JCA consultant will invite the Local Planning Authority representative to meet with them on site to agree on any remedial works required.

5.1.2 Any necessary remedial works will be confirmed in writing and must be carried out in accordance with BS 3998: 2010 - *Recommendations for tree work.*

5.1.3 Due to the large potential penalties for illegally carrying out work to protected trees, JCA recommend that a further check is carried out prior to any works being undertaken post development.

5.2 Post Construction Landscaping

5.2.1 Many of the trees on site may be subject to some form of landscaping or seeding beneath their canopies after the development phase. At this stage the protective barrier will have been removed and the property may be occupied.

5.2.2 Landscaping works should be carried out in such a way as to avoid ground level changes or deep digging. Tractor mounted rotovation or other mechanised cultivation methods must not be used.

5.2.3 No heavy machinery should be brought into the vicinity of retained trees.

5.2.4 Herbicides should be appropriate for the purpose and should not be used in such a way as to damage any retained trees or vegetation.

5.3 Mycorrhizal Fungi Inoculation

5.3.1 As the proposed development will encroach into the RPA of **G22** and **T78**, possibly resulting in some root loss, it would be prudent to apply *Mycorrhizal fungi* to the soils around these trees after the construction phase is complete.

5.3.2 *Mycorrhiza* is a fungus that forms a symbiotic relationship with the tree roots. A tree root associated with *Mycorrhiza* takes up nutrients more effectively than a non associated root. The application of *Mycorrhiza* will therefore be beneficial for **G22** and **T78**.

5.4 Tree Planting Scheme

5.4.1 The Tree Planting Scheme which has been formalised for this development may go ahead in the first tree planting period after the construction phase is complete.

6. Timescale of Works

6.1.1 The timescale for arboricultural requirements are summarised below:

Timescale	Action	✓	Initial
Stage 1	All requirements listed in the planning consent are approved by the Local Authority planning office.		
Stage 2	Undertake the tree works (as detailed at **Appendix 1)**.		
Stage 3	Install the protective barrier around the trees (as detailed at **Appendix 2** and as shown on the Tree Protection Plan at **Appendix 5**).		
Stage 4	Install ground protection within the RPAs of those trees which are not fully protected by the barrier (as detailed in **Section 4**).		
Stage 5	Have the Local Planning Authority inspect the barrier and ground protection measures prior to any on site construction. Once inspected, the protective barrier and ground protection must not to be moved or breached.		
Stage 6	Undertake the construction phase.		
Stage 7	Install permanent hard surfaces whilst undertaking suitable measures to avoid root damage and soil compaction (as detailed in **Section 4** and at **Appendix 4**).		
Stage 8	Following the completion of the construction phase and when all site traffic and machinery has left, the protective barrier and ground protection can be removed.		
Stage 9	Post construction remedial tree works to be undertaken including *Mycorrhizal* inoculation.		
Stage 10	Undertake the Landscaping and Tree Planting Scheme.		

7. Relevant Contact Details

Contact Name	Organisation/Detail	Contact Number
Andrew Bussey	JCA Limited	01422 376335
Local Authority Tree Officer	Lancashire County Council	0845 053 0000

Appendices

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 1	Over mature Ash *Fraxinus excelsior*	17	3	3 S	84 #	11 # 11 # 11 # 11 #	Multi-stemmed at 5m with a balanced crown which overhangs the car park. Occasional pruning wounds. Massive hollow with severe decay noted.	Remove.	FAIR	POOR	MOD	<10	U
G 2	Semi-mature to early-mature Mixed *Mixed*	11	0 +	\ n/a	To 43	See plan	Group of trees of reasonable form. Species include Hawthorn, Field Maple, Elder, Elm and Ash. Decay cavities, deadwood and bark scars noted.	Monitor annually.	GOOD	GOOD	MOD	20-40	B
T 3	Early-mature Sycamore *Acer pseudoplatanus*	16	5	5 S	53	4 4 4.5 4.5	Twin-stemmed at 1m with a balanced crown. Occasional pruning wounds. Bark scar with decay noted at 1.5m.	Monitor annually.	GOOD	FAIR	MOD	20-40	C
T 4	Early-mature Ash *Fraxinus excelsior*	15	6	4 S	44	5.5 5 4 6.2	Single stemmed and leaning with a balanced crown. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
G 5	Young to mature Mixed *Mixed*	To 18	0 +	\ n/a	To 80	See plan	Group of trees on and beyond the boundary line of good value - defects were noted though. Species include Hawthorn, Ash, Goat Willow, Beech, Sycamore, Holly and Oak. Not fully inspected due to vegetation.	No action required.	GOOD	GOOD	MOD	40+	A
T 6	Young Ash *Fraxinus excelsior*	11	3	3 S	13	2.5 2 1 2.5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 7	Semi-mature Mixed *Mixed*	To 11	0 +	\ n/a	To 20	See plan	Three trees of reasonable form with no major visible defects. Species include Ash, Hawthorn and Holly.	No action required.	GOOD	GOOD	LOW	20-40	C
T 8	Mature Ash *Fraxinus excelsior*	13	3	3 N	65 #	6 5.2 4.5 6.2	Multi-stemmed at 4m with a balanced crown. Occasional pruning wounds due to crown lifting. Decay cavities and deadwood noted.	Monitor annually.	GOOD	FAIR	MOD	20-40	B
T 9	Early-mature Lombardy Poplar *Populus nigra 'Italica'*	14	8	8 N	26	4 4 3 1.8	Single stemmed and vertical with an unbalanced crown. Occasional pruning wounds due to crown lifting yet no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 10	Mature Sycamore *Acer pseudoplatanus*	14	1	1 S	90 # at base	6.5 6.5 6 6.5	Twin-stemmed at 0.5m with a balanced crown. Occasional pruning wounds due to crown lifting yet no major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 11	Mature Lombardy Poplar *Populus nigra 'Italica'*	19	4	4 N	49	5 5 5 5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
T 12	Mature Alder *Alnus sp.*	12	3	3 E	35 #	4 4.2 5.1 3	Twin-stemmed at 3m with a balanced crown which overhangs the road. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
G 13	Early-mature to mature Lombardy Poplar *Populus nigra 'Italica'*	To 19	2 +	\ n/a	To 65	See plan	Row of trees which are all single stemmed and vertical with balanced crowns. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
G 14	Semi-mature Ash *Fraxinus excelsior*	To 12	0 +	\ n/a	To 18	See plan	Group of trees of poor form yet no major visible defects. The crowns overhang the road.	No action required.	GOOD	GOOD	LOW	20-40	C
T 15	Semi-mature Sycamore *Acer pseudoplatanus*	13	4	4 E	25 #	4.5 4 5 4	Single stemmed and vertical with a balanced crown which overhangs the road. Poor form as it is suppressed by **T16**. Limited inspection due to vegetation.	Remove.	GOOD	POOR	LOW	<10	U
T 16	Semi-mature to mature Ash *Fraxinus excelsior*	16	4	4 S	72 #	6 6 7 7.5	Single stemmed and vertical with a balanced crown which overhangs the road. Occasional pruning wounds yet no major visible defects. Ivy prevented detailed inspection.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	MOD	20-40	B
T 17	Over mature Ash *Fraxinus excelsior*	20	5	5 E	95 #	9 9 9 9	Single stemmed and vertical with a balanced crown which overhangs the road. No evidence of significant pruning and no major visible defects. Deadwood noted. Limited inspection due to vegetation.	Deadwood.	GOOD	GOOD	MOD	40+	A
T 18	Over mature Ash *Fraxinus excelsior*	21 #	5 #	\ n/a	100 #	12 # 12 # 12 # 12 #	Estimated to be multi-stemmed at 4m with a balanced crown. No evidence of significant pruning. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	B
T 19	Mature Ash *Fraxinus excelsior*	13	0.5	0.5 E	44	5 5 6 4	Single stemmed and leaning with a balanced crown. Occasional pruning wounds due to crown lifting yet no major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
T 20	Mature Sycamore *Acer pseudoplatanus*	16	3	1.5 E	49	6 6 6 6	Single stemmed and vertical with a balanced crown which overhangs the road. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	B

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
G 21	Young Mixed *Mixed*	To 10 #	0 +	\ n/a	To 12	See plan	Dense plantation containing Silver Birch, Ash, Goat Willow, Rowan, Cherry, Oak, Hazel and Alder.	No action required.	GOOD	GOOD	MOD	40+	B
G 22	Young to mature Mixed *Mixed*	To 18	0 +	\ n/a	To 70 #	See plan	Dense woodland group with crowns which overhang the road in places. Species include Ash, Sycamore, Goat Willow, Hawthorn, Elm, Norway Maple and Alder. Deadwood, dead stems, decay cavities and bark scars noted.	Deadwood and monitor annually.	GOOD	GOOD	HIGH	40+	A
T 23	Mature Alder *Alnus sp.*	16	11	\ n/a	55 #	5 # 5 # 5 # 5 #	Single stemmed and leaning with an unbalanced crown which overhangs the footpath. Severe decay noted to hollow stem.	Remove.	POOR	POOR	LOW	<10	U
T 24	Young Silver Birch *Betula pendula*	4.5	6.5	\ n/a	7	2 1 2 2	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	LOW	20-40	C
T 25	Young Silver Birch *Betula pendula*	9	0.5	\ n/a	8	2.5 2.5 2.5 2.5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	LOW	20-40	C
T 26	Semi-mature Norway Spruce *Picea abies*	13	1	1 E	25 #	2.8 1.5 3 2.5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	LOW	20-40	C
T 27	Semi-mature Norway Spruce *Picea abies*	13	1	1 E	18 #	2.5 1.5 3 1	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	LOW	20-40	C
T 28	Early-mature Norway Spruce *Picea abies*	16	2	2 E	35 #	3.2 3.2 3.2 3.2	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	MOD	20-40	C
T 29	Early-mature Ash *Fraxinus excelsior*	15	3	3 E	34	5 5 5 5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	Remove to facilitate the construction of the new access road.	GOOD	GOOD	LOW	20-40	C
T 30	Early-mature Goat Willow *Salix caprea*	14	0	\ n/a	28 #	3 3 3 2.5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	C

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 31	Early-mature Yew *Taxus baccata*	13	0	\ n/a	35 #	3.5 3.5 3.5 3.5	Multi-stemmed at 1m with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
T 32	Semi-mature Goat Willow *Salix caprea*	12	4	4 E	18	2.8 3 3 3	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 33	Semi-mature Yew *Taxus baccata*	7	1.5	1.5 N	17	3 3 3 1.3	Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 34	Early-mature Yew *Taxus baccata*	13	2	2 W	51 at base	3.5 4 4.8 4	Multi-stemmed at 1m with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	40+	B
G 35	Over mature Horse Chestnut *Aesculus hippocastanum*	To 18	0 +	\ n/a	To 100	See plan	Three trees each with moderate to severe Bleeding Canker of Horse Chestnut. Large bark scars and crown dieback noted on all specimens.	Remove.	POOR	POOR	MOD	<10	U
T 36	Early-mature Norway Spruce *Picea abies*	18	4	4 S	39	2.5 3 3.4 5.5	Single stemmed and leaning with an unbalanced crown. No evidence of significant pruning and no major visible defects. Ivy prevented detailed inspection	Remove ivy and inspect stem for defects.	GOOD	GOOD	LOW	20-40	B
T 37	Mature Sycamore *Acer pseudoplatanus*	16	4	3 S	50 # at base	7 7 6 4	Multi-stemmed at ground level with an unbalanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	C
G 38	Mature Mixed *Mixed*	To 20	0 +	\ n/a	To 90	See plan	Group of trees situated in a private garden. Limited inspection due to access. Species include Scots Pine, Beech, Yew, Cherry and Apple. No major visible defects observed.	No action required.	GOOD	GOOD	MOD	40+	A
T 39	Over mature Beech *Fagus sylvatica*	23	0	\ n/a	90 #	12 # 12 # 12 # 12 #	Estimated to be single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	MOD	40+	A
T 40	Early-mature Alder *Alnus sp.*	13	1.5	1.5 W	45 # at base	3 5 1 4.5	Multi-stemmed at ground level with an unbalanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	C

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 41	Mature Ash *Fraxinus excelsior*	17	1	1 S	54	6 6 6 7	Multi-stemmed at 4m with a balanced crown. No evidence of significant pruning and no major visible defects. Deadwood noted.	Deadwood.	GOOD	GOOD	LOW	40+	B
T 42	Over mature Ash *Fraxinus excelsior*	24	1	1 S	65 #	9 # 9 # 9 # 9 #	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Ivy and access prevented detailed inspection.	Remove Ivy and inspect stem for defects.	GOOD	GOOD	MOD	20-40	B
G 43	Young to over mature Mixed *Mixed*	To 20	0 +	\ n/a	To 65	See plan	Group of trees of reasonable form. Species include Sycamore, Ash and Hawthorn. Limited inspection due to access and vegetation yet no major visible defects observed.	No action required.	GOOD	GOOD	MOD	40+	B
T 44	Semi-mature Oak *Quercus robur*	7	3	\ n/a	18	3 3 3 3	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	40+	C
T 45	Mature Sycamore *Acer pseudoplatanus*	18	3	\ n/a	To 72	7 7 7 7	Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	A
T 46	Mature Lime *Tilia sp.*	18	1	\ n/a	82 #	8 8 8 8	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	A
T 47	Mature Sycamore *Acer pseudoplatanus*	17	2	\ n/a	65 #	7 # 7 # 7 # 7 #	Twin-stemmed at 2m with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
T 48	Early-mature Ash *Fraxinus excelsior*	17	3	3 W	50 #	7 # 7 # 7 # 7 #	Twin-stemmed at 2m with a balanced crown which overhangs the road. No evidence of significant pruning and no major visible defects. Deadwood noted.	Deadwood.	GOOD	GOOD	MOD	20-40	B
T 49	Semi-mature Ash *Fraxinus excelsior*	13	4	4 E	To 20	3 0 6 4	Single stemmed and leaning with an unbalanced crown which overhangs the road. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 50	Early-mature / *#N/A*	7	/	\ n/a	40 #	/	Dead stem.	Remove.	DEAD	DEAD	DEAD	<10	U

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 51	Semi-mature Ash *Fraxinus excelsior*	10	1	1 E	21	3.5 4.1 3 3	Single stemmed and leaning with a balanced crown. No evidence of significant pruning. No evidence of significant pruning. Tree is growing out of retaining wall.	Remove.	FAIR	FAIR	LOW	<10	U
T 52	Early-mature Oak *Quercus robur*	13	1	1 E	43	5 6 6 5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	Remove to facilitate the construction of the new building.	GOOD	GOOD	LOW	40+	C
G 53	Semi-mature Ash & Elm *Fraxinus excelsior & Ulmus sp.*	To 10	0 +	\ n/a	To 16	See plan	Self seeded trees of poor form yet no major visible defects.	Remove to facilitate the construction of the car park.	GOOD	POOR	LOW	10-20	C
G 54	Semi-mature to mature Alder *Alnus sp.*	To 18	0 +	\ n/a	To 55	See plan	Very attractive group of waterside trees with no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	40+	A
G 55	Young Mixed *Mixed*	To 12	0 +	\ n/a	To 13	See plan	Single stemmed trees of low value yet with no major visible defects. Species include Sycamore, Goat Willow, Ash and Silver Birch.	No action required.	GOOD	GOOD	LOW	20-40	C
G 56	Semi-mature to early-mature Hawthorn *Crataegus monogyna*	To 8	0 +	\ n/a	To 30	See plan	Group of overgrown hedgerow trees with no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 57	Semi-mature Alder *Alnus sp.*	To 11	0 +	\ n/a	To 20	See plan	Waterside trees of reasonable form. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	C
T 58	Early-mature Alder *Alnus sp.*	13	0	\ n/a	30 #	4 4.5 1 2	Single stemmed and leaning with an unbalanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	C
T 59	Mature Ash *Fraxinus excelsior*	14	0	\ n/a	45 #	4.5 6 3 4.5	Multi-stemmed at 3m with a balanced crown. No evidence of significant pruning and no major visible defects. Deadwood and decay cavities noted. Limited inspection due to access.	Monitor annually.	GOOD	GOOD	LOW	20-40	C
G 60	Young to mature Mixed *Mixed*	To 18	0 +	\ n/a	To 70 #	See plan	Dense woodland group with crowns which overhang the road in places. Species include Ash, Sycamore, Goat Willow, Hawthorn, Elm, Norway Maple and Alder. Deadwood, dead stems, decay cavities and bark scars noted. Limited inspection due access.	Deadwood and monitor annually.	GOOD	GOOD	HIGH	40+	A

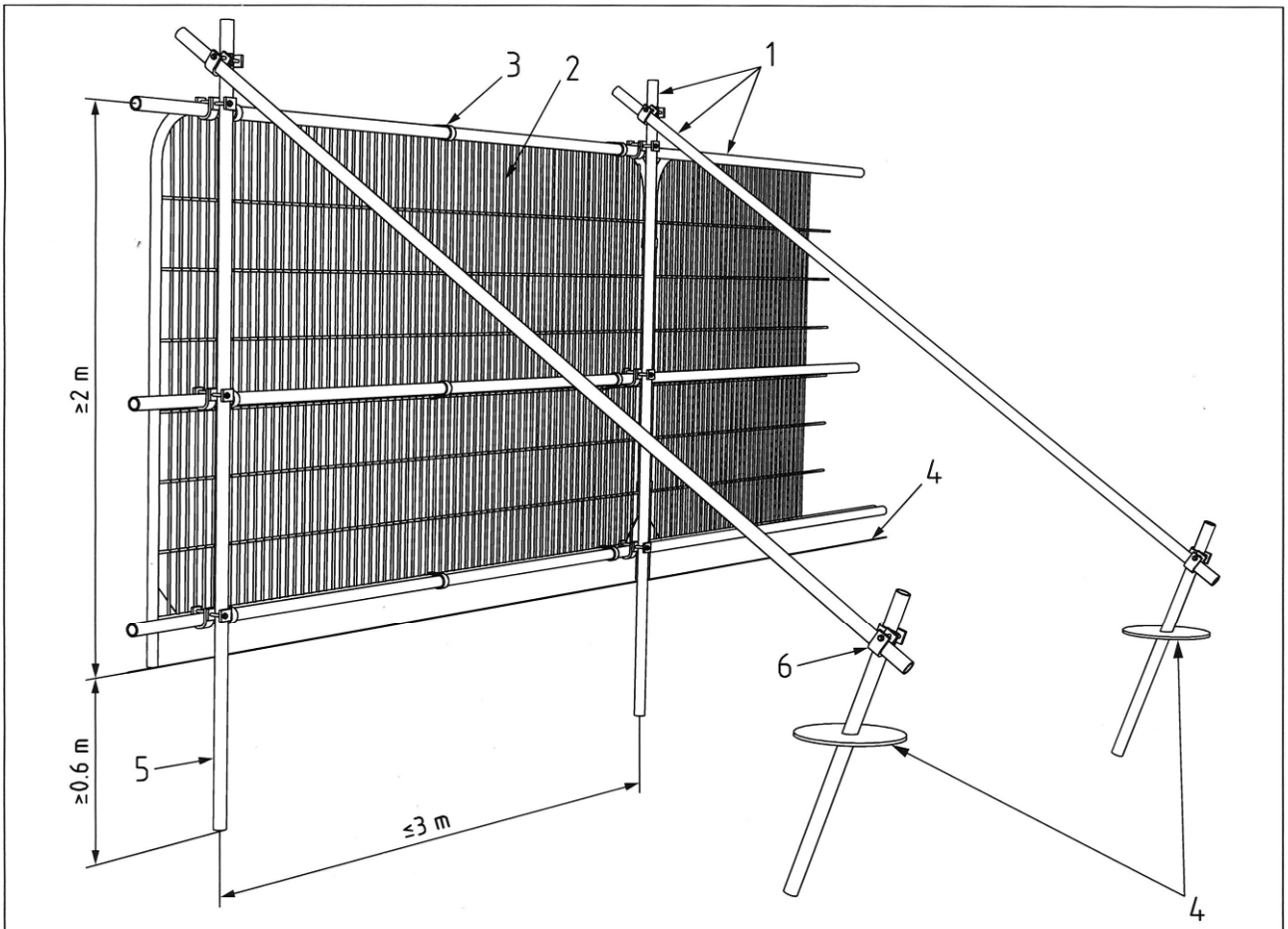
Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
G 61	Young to semi-mature Cherry & Aspen *Prunus sp & Populus tremula*	To 13	0 +	\ n/a	To 24	See plan	Planted trees of reasonable form with no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 62	Mature Sycamore *Acer pseudoplatanus*	15	2	\ n/a	52	6.3 6.3 6.3 6.3	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	B
G 63	Young to early-mature Mixed *Mixed*	To 14	0 +	\ n/a	To 50	See plan	Group of mixed planted trees of good quality and with good screening potential. Species include Cherry, Hawthorn, Ash, Rowan, Sycamore, Oak and Silver Birch. Limited inspection due to vegetation.	Remove the area shown in red on the Tree Protection Plan to facilitate the construction of the new access road.	GOOD	GOOD	MOD	20-40	B
G 64	Young to semi-mature Mixed *Mixed*	To 13	0 +	\ n/a	To 30	See plan	Riverside trees of low value yet with no major visible defects. Species include Alder, Elm, Goat Willow and Elder.	No action required.	GOOD	GOOD	LOW	20-40	C
G 65	Young to mature Mixed *Mixed*	To 17	0 +	\ n/a	To 45	See plan	Group of attractive riverside trees of good value with crowns which overhang the road. Species include Sycamore, Copper Beech, Elm and Willow. Limited inspection due to access.	No action required.	GOOD	GOOD	MOD	20-40	B
G 66	Young to early-mature Mixed *Mixed*	To 15	0 +	\ n/a	To 30	See plan	Group of riverside trees growing against and from the retaining wall. Species include Alder, Cherry, Sycamore and Elm. Phytophthora noted within the group.	Remove.	FAIR	POOR	LOW	<10	U
T 67	Mature Alder *Alnus sp.*	17	4	4 W	62 #	5 # 6 # 6 # 6 #	Waterside tree which is single stemmed and vertical with a balanced crown which overhangs the road. No evidence of significant pruning and no major visible defects. Limited inspection due to waterside location.	No action required.	GOOD	GOOD	MOD	20-40	B
T 68	Mature Sycamore *Acer pseudoplatanus*	17	0	\ n/a	To 50 #	5 8 4 5	Waterside tree which is twin-stemmed at ground level with a balanced crown which overhangs the road. No evidence of significant pruning. Limited inspection due to access.	No action required.	GOOD	GOOD	MOD	20-40	B
T 69	Early-mature Alder *Alnus sp.*	15	3	3 n/a	To 40 #	6 6 4 3	Waterside tree which is multi-stemmed at ground level with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	MOD	20-40	B
G 70	Young to semi-mature Mixed *Mixed*	To 12	0 +	\ n/a	To 20	See plan	Single stemmed trees of low value. Species include Alder, Sycamore, Elm and Ash.	No action required.	GOOD	GOOD	LOW	20-40	C

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 71	Mature Ash *Fraxinus excelsior*	14	4	\ n/a	48 #	6 # 6 # 6 # 6 #	Twin-stemmed at 2m with a balanced crown which overhangs the road. Multiple pruning wounds due to crown lifting yet no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	MOD	20-40	B
G 72	Young to mature Mixed *Mixed*	To 17	0 +	\ n/a	To 70 #	See plan	Waterside trees forming woodland group. Species include Ash, Sycamore and Hawthorn. Limited inspection due to access.	No action required.	GOOD	GOOD	MOD	20-40	B
T 73	Early-mature Sycamore *Acer pseudoplatanus*	6	0	0 n/a	29 #	3.5 # 4 # 3.5 # 3 #	Growing on the top of waterside retaining wall. Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to riverside location.	No action required.	GOOD	GOOD	MOD	20-40	C
T 74	Semi-mature Crack Willow *Salix fragilis*	6	0	0 n/a	34#	3 3.2 5 # 4 #	Growing on the top of waterside retaining wall. Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning and no major visible defects. Minor deadwood. Limited inspection due to riverside location.	Remove to facilitate the construction of the access road to the new cricket ground.	GOOD	GOOD	MOD	20-40	C
T 75	Semi-mature Common Ash *Fraxinus excelsior*	7	3	3 n/a	17	3 # 3 # 3 # 3 #	Growing on the top of waterside retaining wall. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to riverside location.	Remove to facilitate the construction of the access road to the new cricket ground.	GOOD	GOOD	LOW	10-20	C
T 76	Early-mature Hawthorn *Crataegus monogyna*	4.8	0.5	0.5 n/a	35 #	4.3 3 # 4.2 3.3	Growing on the top of waterside retaining wall. Multiple stemmed at ground level with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to riverside location.	Remove to facilitate the construction of the access road to the new cricket ground.	GOOD	GOOD	LOW	20-40	C
T 77	Over-mature Common Alder *Alnus Glutinosa*	5.8	2	2 n/a	62	5# 4.3 4.3 4.3	Multiple stemmed at 3 metres with a balanced crown. No evidence of significant pruning. Significant decay cavities to lower stem. The main stem has snapped out at 3m and has large decay cavity at this point. The defects noted present a good ecological value.	Remove to facilitate the construction of the access road to the new cricket ground.	GOOD	POOR	LOW	20-40	B
T 78	Over-mature Common Alder *Alnus Glutinosa*	13	2	2 n/a	76	6 6 6 5.1	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Slight dieback to upper crown. Slight decay noted to buttress to south. 2 decay cavities noted at 3.5m.	Deadwood. Monitor annually.	FAIR	FAIR	LOW	20-40	B
T 79	Early-mature Common Alder *Alnus Glutinosa*	4.8	1.5	1.5 n/a	36	3# 2.6 3# 3#'	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Large vertical decayed hollow to main stem from base to 2.5 metres. The defect noted presents a good ecological value.	Monitor annually.	GOOD	POOR	LOW	20-40	C
G 80	Semi-mature to mature Hawthorn and Alder *Crataegus monogyna and Alnus sp.*	To 6.5	0	0 n/a	To	See plan	Overgrown hedgerow with intermittent individual trees of good form and good ecological value. No major visible defects. Limited inspection due to barbed wire fence and vegetation.	No action required.	GOOD	GOOD	LOW	10-20	B

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 81	Over-mature Common Alder *Alnus Glutinosa*	6	2	0.5 N	55#	4.8 4.8 5# 4.8	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Decay at base leads to hollow stem. Severe decay leads to an additional hollow stem at 2.8m. The defects noted present a good ecological value. Limited inspection due to barbed wire fence.	Monitor annually.	GOOD	GOOD	LOW	10-20	C
T 82	Over-mature Common Alder *Alnus Glutinosa*	9	2.8	1 NE	68#	5.5# 5.6 6# 6#	Twin-stemmed at 5m with a balanced crown. No evidence of significant pruning. Two decay cavities noted at 1.8m. Limited inspection due to barbed wire fence.	Monitor annually.	GOOD	GOOD	LOW	20-40	A
T 83	Mature Common Alder *Alnus Glutinosa*	8.5	2.2	1 S	49#	6# 6.4 6# 6.9	Single-stemmed with a slight lean and a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to barbed wire fence.	No action required.	GOOD	GOOD	LOW	40+	B
T 84	Over-mature Common Alder *Alnus Glutinosa*	15	3	1.5 S	100#	6# 7.1 9# 6.8	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to barbed wire fence and vegetation.	No action required	GOOD	GOOD	LOW	40+	A
T 85	Over-mature Sycamore *Acer pseudoplatanus*	19	2	2 n/a	115#	11# 7.5# 9# 8	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Minor deadwood. Limited inspection due to barbed wire fence.	Deadwood.	GOOD	GOOD	MOD	40+	A
G 86	Semi-mature Elder, Hawthorn *Sambucus nigra, Crataegus monogyna*	To 4	1	1 n/a	To 13	See plan	2 trees of low value, no major visible defects.	No action required.	GOOD	GOOD	LOW	10-20	C
T 87	Over-mature Common Alder *Alnus Glutinosa*	15	2	2 n/a	78	8# 4 3.5 10	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Internal decay leads to hollowed stem from 3 metres to 6 metres. The tree appears to be close to collapse, however, this tree has a good ecological value and also has bat roost potential.	Dismantle prior to the tree collapsing on the adjacent T85 which is regarded as a high retention category specimen.	POOR	POOR	MOD	<10	U
T 88	Over-mature Common Ash *Fraxinus excelsior*	21	1	1 n/a	90#	11# 6# 6 10.5	Multi-stemmed at 6m with a balanced crown. No evidence of significant pruning. Many decay cavities present throughout the crown. Vast internal decay to base leads to large hollow within base of main stem. The decay appears to have destroyed over 70% of the live wood, as such; this tree is likely to be structurally unsound and is likely to collapse. Please note that this tree has a good ecological value and also has bat roost potential.	Dismantle prior to the tree collapsing on the adjacent T89 which is regarded as a high retention category specimen.	GOOD	GOOD	MOD	<10	U
T 89	Over-mature Sycamore *Acer pseudoplatanus*	19	2.5	2 N	105#	11# 12# 9# 8.5	This tree appears to be situated on adjacent land. Twin-stemmed at 5m with a balanced crown. No evidence of significant pruning. No major visible defects. Minor deadwood.	No action required.	GOOD	GOOD	MOD	40+	A

Appendix 2: Protective Barrier

A2.1 The protective barrier will be appropriate to the degree and proximity of likely construction works. The default specification of BS 5837: 2012 recommends a vertical and horizontal, scaffold framework, well braced to resist impacts, with vertical tubes at no more than 3m intervals. These should be driven into the ground. Weld mesh panels should be affixed to this framework with scaffold clamps - See Figure 1.



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 1: 'Protective Barrier to BS 5837: 2012'.

A2.2 In certain circumstances, site buildings, such as a Portakabin, may be used in place of protective barrier where space is at a premium. JCA must be consulted before such action is taken.

TREE PROTECTION ZONE

NO STORAGE OR OPERATIONS WITHIN THIS AREA

KEEP OUT

RESTRICTED ACCESS
NO VEHICLES
NO STORAGE OF MATERIALS

REPORT TREE DAMAGE TO JCA LTD ON
01422 376 335

Appendix 3: Utilities and Drainage

A3.1 Over-ground services should ideally be routed away from areas where they are likely to interfere with the crowns of mature trees. Similarly any landscaping should take account of over-ground services and mature tree size.

A3.2 *NJUG 10: Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees* is a principle set of guidelines on working near trees for the utilities sector and should be considered when installing services.

A3.3 New underground services should be grouped together and routed away from Root Protection Areas. Where this is not possible, techniques should be adopted which avoid the severance of many roots. Some examples are listed below:

Radial trenching: This is illustrated in Figure 2. Trenches should be hand-dug and kept as narrow as possible. They should not extend to within 1m from the base of the tree trunk. Exposed roots larger than 25mm in diameter should be retained with their bark intact. A mechanical mole should ideally be used for the section beneath the tree. Our representative should be informed in advance of such operations so that monitoring arrangements can be made.

Mechanical Mole: Pits are excavated beyond the RPA and the mechanical device is sent through the protected area at a depth of no less than 0.6m. Machinery should be selected which can be externally lubricated by water rather than oil etc.

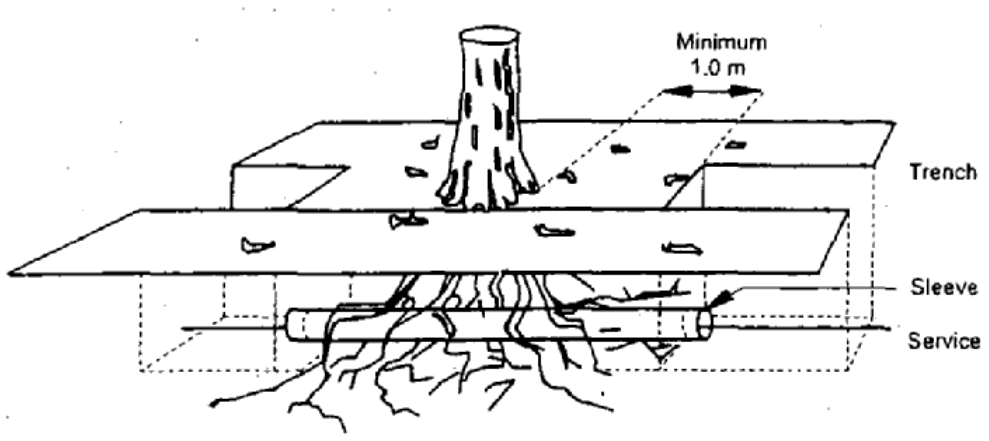


Figure 2: Radial Trenching

Appendix 4: Permanent Hard Surfaces

A4.1 This Appendix outlines the option available for constructing hard surfaces within the RPA of a tree, which in this case is the No-Dig Method. The design of such a construction needs to be sensitive to the requirements of tree roots, substantial enough to withstand the expected levels of traffic and practicable in terms of ease of fabrication.

A4.2 We are not qualified to recommend any particular construction method in terms of durability or structural integrity and any proposed construction should be approved by a qualified structural engineer prior to implementation, however, with regards to trees, we make to following comments:

- Severance of roots and soil compaction should be avoided. However, if it is necessary to sever roots or if they are severed accidentally we must be informed so that we are able to assess and recommend accordingly.

- Air and water must be able to diffuse into the soil beneath the engineered surface. Toxic substances which could leach into the ground must be avoided, as should substances which affect the pH value of the soil, for example limestone.

A4.3 **The No-Dig Method:** This involves construction of a surface with no excavation, soil stripping or site grading (see Figure 3). All construction takes place above ground level. Preparation is as follows:

A4.4 Ground vegetation is killed using a suitable herbicide. Care must be taken to select a herbicide which does not damage the tree roots within the treated area. Once the vegetation has died, the dead organic matter should be removed. This helps prevent the future build up of anaerobic conditions or settlement due to decomposition.

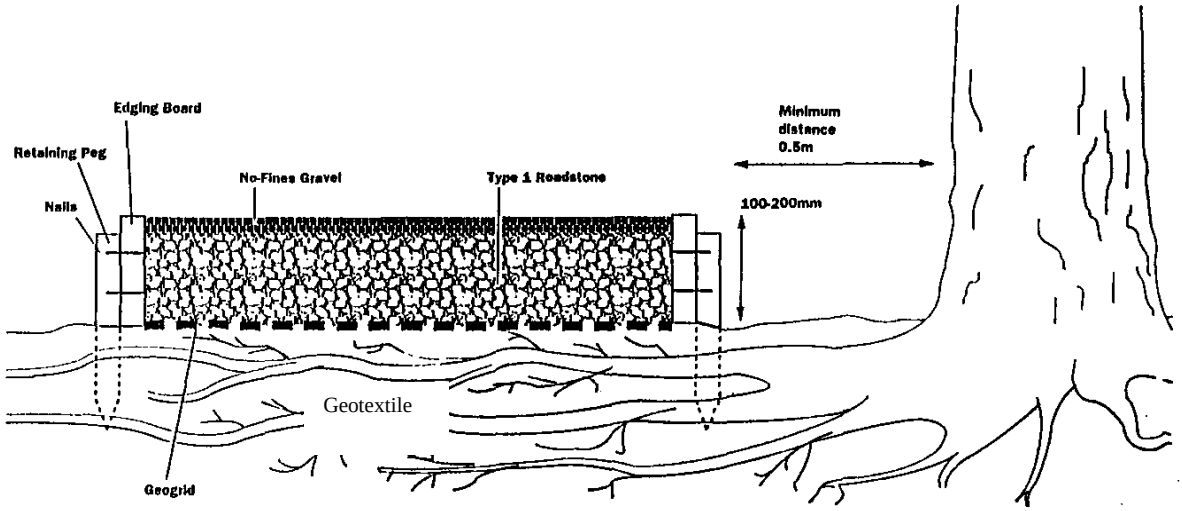
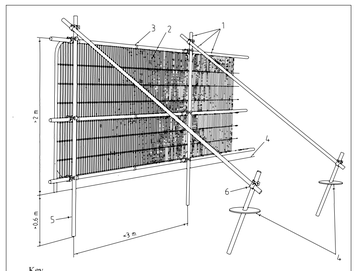


Figure 3. A light duty drive constructed using the ***No Dig Method.***

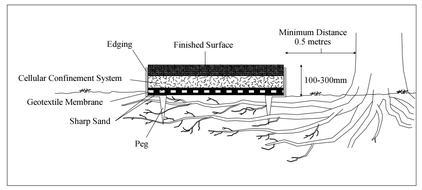
Default specification for a protective barrier



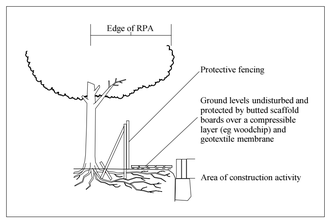
Key

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6m)
6. Standard scaffold clamps

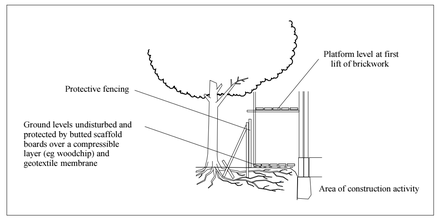
An example of a 'no dig' road construction



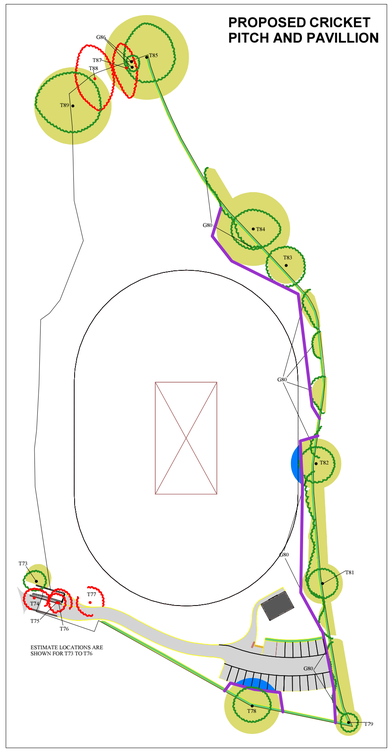
An example of a walkway within the RPA



An example of scaffolding within the RPA



MAIN SITE PLAN



N
W E
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Appendix 5: Tree Protection Plan

Address: Kirk Mill, Chipping, Near Clitheroe, Lancashire.
JCA Ref: 10633-B/AJB.

SCALE: 1:1000	PAPER SIZE : A1

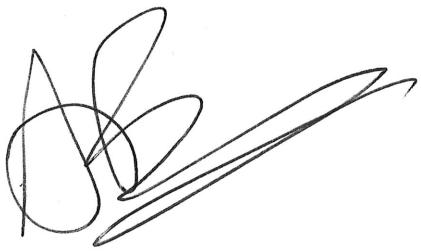
SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: TT

	TREE TO BE RETAINED
	TREES TO BE REMOVED
	CENTRE OF TREE TO BE RETAINED
	CENTRE OF TREE TO BE REMOVED
	ROOT PROTECTION AREA (RPA)
	AREA OF RPA NOT PROTECTED BY FENCING. NO MATERIALS SHOULD BE STORED HERE, GROUND COMPACTION MUST BE AVOIDED, SPECIAL SURFACES /CONSTRUCTION TECHNIQUES MUST BE CONSIDERED WHEN WORKING/CONSTRUCTING WITHIN THESE AREAS AND ONLY HAND EXCAVATIONS ARE PERMITTED
	PROTECTIVE FENCE LINE (CEZ)

JCA Limited
Arboricultural & Forestry Consultants

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed



.....

Andrew Bussey.

9th October 2013

For and on behalf of ***JCA Ltd***

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- Tree root identification

Tree Advice for Landowners, Homeowners, and Homebuyers

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- Tree surveys for mortgage purposes
- Planting advice/scheme design
- Garden tree and shrub maintenance plans

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- TPO re-surveys
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- Woodland Management Plans
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Catherine Cocking
RGN RM

Photo front cover: Sluice at Bowers Mill

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