Ford energy from waste

FORD ENERGY RECOVERY FACILITY AND WASTE SORTING AND TRANSFER FACILITY, FORD CIRCULAR TECHNOLOGY PARK

ARBORICULTURAL IMPACT STATEMENT

JUNE 2020

CBA Trees

Viridor

GRUNDON

June 2020
CBA11322 v1B

Viridor Waste Management Ltd
Grundon Waste Management Ltd
Ford Energy from Waste Ltd

ARBORICULTURAL IMPACT STATEMENT

Site:
Ford Energy Recovery Facility and Waste Sorting and Transfer Facility,
Ford Circular Technology Park

East Lodge, Leylands Business Park,
Colden Common, Winchester, SO21 1TH
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The Complete Arboricultural Consultancy

ARBORICULTURAL IMPACT ASSESSMENT

Client:	Viridor Waste Management Limited Grundon Waste Management Limited Ford Energy from Waste Limited
Site:	Ford Energy Recovery Facility and Waste Sorting and Transfer Facility, Ford Circular Technology Park
Arboricultural Consultant:	Stefan Rose *BSc (Hons), Tech Cert ArborA, TechArbor.A*
Date:	June 2020

1.0 INTRODUCTION

1.1 This Arboricultural Impact Assessment (AIA) is for the proposed Ford energy recovery facility (ERF) and waste sorting and transfer facility (WSTF) to encompass the following elements:

- A single stream energy recovery facility (ERF) – located on the eastern half of the application site and with a design capacity to treat 275,000 tonnes per annum (tpa) of non-hazardous, non-recyclable, residual waste material. A mixture of commercial and industrial (C&I) waste and municipal solid waste (MSW) will be the main sources of waste for the facility and this will be sourced principally from within the West Sussex county area, but also from the neighbouring counties of East Sussex, Hampshire and Surrey. Towards the centre of the building will be the steam turbine generator. This is designed to utilise high pressure steam from water heated by the combustion processes and generate approximately 31 MW of electrical power, of which approximately 28 MW will be exported to the local electrical distribution network (equivalent of powering approximately 68,250 homes over the lifetime of the plant) and the remainder will be used within the ERF. The proposals will also be able to export up to 10 MWth of heat in the form of steam or hot water in the future, should off-site recipients be identified. The ERF building will also include education, administrative and welfare facilities.

- A waste sorting and transfer facility (WSTF) – located on the western half of the application site and with a capacity to process up to 20,000 tpa non-hazardous waste. The WSTF will take MSW and C&I wastes collected from local householders, businesses and industries principally from within the West Sussex county area, but also from the neighbouring counties of East Sussex, Hampshire and Surrey.

- Buildings and structures ancillary to the ERF and WSTF – these include: a gatehouse, five weighbridges, vehicle workshop, air cooled condensers, electricity transformer, pump houses, storage tanks (diesel, fire water), staff and visitor parking and internal roads.
- Landscape planting – along the north, east and western boundaries of the site in order to screen the lower part of the buildings and the activity on the site at ground level. The site boundaries will also include security fencing, sections of flint wall, landscape bunds and acoustic timber fencing.
- Drainage – a proposed surface water drainage strategy for the developed site and a proposed foul water network discharging domestic foul and trade effluent into a local sewer.

1.2 This is an assessment of the arboricultural impact that the planning proposal will have on the tree stock based on drawings provided by Terence O'Rourke and specifically:

- Landscape Design, drawing no. 2829-01-SK002 Rev D by Axis

1.3 This AIA will highlight specific areas of conflict, trees that can be retained, trees that will need to be removed (where necessary) and ways to mitigate the proposals on the existing trees that may be implicated by the proposal or through construction activities for implementation.

1.4 **Note:** Any mitigating build techniques for working methodologies etc. that are detailed within this assessment must be agreed upon/accepted to ensure that post planning approval, tree protection is in place and trees that are detailed for retention are retained and not removed because working practices have not considered the impact on trees.

2.0 SCOPE AND PURPOSE OF REPORT

2.1 This AIA considers the impact that the development will have upon the existing tree stock, and also provides solutions for construction where necessary to mitigate or reduce any potential impact that the proposals may have on retained trees, to ensure the safe and healthy retention of any trees which are considered to be worthy of retention.

2.2 In line with our written quotation and verbal instructions, information has been compiled in accordance with BS5837:2012 and current best practice advice.

- To undertake a Tree Survey, schedule appended at CB1. The existing tree stock was assessed by a qualified arboriculturist in accordance with BS5837:2012 on 6th January 2020. This exercise identified 4 (four) individual trees and 11 (eleven) groups of trees and shrubs.

- To produce a Root Protection Area Schedule in accordance with BS5837: 2012 Annex D, appended at CB2.

- To produce an AutoCAD compliant Tree Survey Plan that relies on the accuracy of the topographical survey provided by the client (plan CBA11322.01A TSP appended with the tree survey schedule at CB1).

- To undertake an Arboricultural Impact Assessment (AIA) of the proposed development provided by the client to identify which trees will be lost, which can be retained and suggest mitigating build techniques in order to retain trees as appropriate. This AIA only considers the impact of the proposed works, which are illustrated on the drawings detailed above. If any changes to the proposed layout occur, then further advice should be sought.

2.3 The advice provided has been formulated without discussion with the main ground or construction contractors who at this stage have not been appointed. Once full planning consent has been given and the main contractors are appointed, amendments to this statement may be required for construction purposes. All amendments would need to be assessed by the retained arboricultural consultant and approved in writing by West Sussex County Council Planning Officer/Tree Officer.

3.0 SITE DESCRIPTION

3.1 The application site is located at the Ford Circular Technology Park (the former Tarmac blockworks site, which forms part of the former Ford Airfield) to the west of the village of Ford.

3.2 The 7.11 ha site is currently partially used for the existing Waste Transfer Station operations and partially vacant buildings. The existing Waste Transfer Station building is located towards the centre of the site and portacabins, parking and containers associated with this operation are situated to the west of the Waste Transfer Station. There are also two vacant former hangar buildings towards the north of the site and a large area of hardstanding is situated towards the south and east of the site.

3.3 Vehicular access to the site is gained via the existing access road that connects the site at its south east corner to Ford Road, just to the north of Climping / HMP Ford. This access road has recently replaced the previous one-way circulation system that saw vehicles using Rollaston Park Road to access the site from the west and the private access road to the north of Rodney Crescent to egress onto Ford Road to the east.

3.4 The application site also includes a small area of hardstanding to the north west of the main part of the site.

4.0 DEFINITION OF ROOT PROTECTION AREA (RPA)

4.1 The RPA of a tree is defined in BS5837:2012 as a "*layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and*

soil structure is treated as a priority". This is calculated as an area based on the stem diameter of the tree. It is usually considered to be a circular shape centred on the trunk of the tree, unless an arboriculturalist considers site factors may have affected this.

4.2 In this instance, previously built form (buildings and roads) may have had an impact on the theoretical rooting spread of trees. However, at this stage no onsite investigations have been completed to examine this and therefore the principle that the built form has caused a change from the theoretical circular root protection area has not taken place. At this time the considered assumption is that tree roots will be beneath hard standing on site and that any change that may have occurred to the morphology of tree roots would be out away from the site and into the agricultural fields.

5.0 TREE PRESERVATION ORDER STATUS AND TREE STOCK

5.1 Following consultation with the interactive mapping facility on the West Sussex County Council website CBA Trees can confirm that at the time of enquiry (enquiry made in May 2020), there are no Tree Preservation Orders indicated on site and the site is not within a Conservation Area.

5.2 It is advised that if it is intended to carry out works to any of the trees prior to the granting of Full Planning Consent and Discharge of Planning Conditions, checks should be made with West Sussex County Council to ascertain the legal protection status of trees prior to works commencing, as the online mapping facility may not be fully up to date at the time the check was made and legal protection to the trees could have been served after the compiling of this report.

5.3 CBA Trees undertook a tree survey on 6th January 2020. The tree survey exercise identified 4 (four) individual trees and 11 (eleven) groups of trees and shrubs. The Tree Survey Schedule and Tree Survey Plan (CBA11322.01A TSP) are appended at CB1.

5.4 ***Tree Categorisation Method***

Category U = Trees in such a condition that any value would be lost within 10 years or should be removed for reasons of sound arboricultural management.
Individual Tree: 1
Group: 4

NOTE: "Category U trees are those in such a condition they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years."

Category A = Trees of high quality and value: in such a condition as to make a substantial contribution, (40 years or more is recommended).
There were no trees classified within this category at the time of the survey.

Category B = Trees of moderate quality and value, capable of making a significant contribution for more than 20 years. The following were classified as moderate 'B' grade category at the time of survey:
Individual Tree: 1
Groups: 2, 3, 4, 8 and 11

Category C = Trees of low quality and value which might remain for a minimum of 10 years or young trees with stems of less than 150mm diameter. The following were classified as low 'C' grade category at the time of surveying:
Individual Trees: 2 and 3
Groups: 1, 5, 6, 7 and 9

NOTE: "Trees under these categories are trees that should be a material consideration in the development process; the subcategories are intended to reflect arboricultural, landscape and cultural values respectively."

5.5 For more details of the existing tree stock, refer to the Tree Survey Schedule (appended at CB1).

6.0 ARBORICULTURAL IMPACT ASSESSMENT, PROPOSED TREE RETENTION AND TREE LOSS

6.1 In accordance with the recommendations contained within BS5837:2012, an experienced arboriculturalist has assessed the requirements for tree protection and the Root Protection Area (RPA). The impact of the proposed outline development are detailed below, along with any mitigating measures to ensure the retention of these trees.

6.2 As part of the assessment, dimensions have been scaled from the Landscape Design Plan (drawing no. 2829-01-SK002 Rev D by Axis) prepared and modified, to include the relevant tree survey data (tree protection plan CBA11322.02A TPP appended at CB3).

6.3 **Table 1:** Tree Impact

Tree Number	Tree Species	BS5837: 2012 Category	Impact
Grp 1	Leyland Cypress *X Cuprocyparis leylandii*	C1+2	• Retained • Removal of fencing • Removal of concrete surfacing • Installation of new fencing • Installation of gabion wall • Installation of acoustic bund and soft landscaping • Root, trunk and crown damage possible
Grp 2	Horse Chestnut Poplar Hawthorn	B1+2	• Retained • Unaffected by development proposals

	Lime Common Ash Sycamore		
Grp 3	Hornbeam Horse Chestnut Poplar	B1+2	• Retained • Unaffected by development proposals
Grp 4	Hazel Goat Willow Poplar Aspen	B1+2	• Retained • Offsite • Removal of fencing • Removal of concrete surfacing • Installation of new fencing • Installation of gabion wall • Installation of acoustic bund and soft landscaping • Root, trunk and crown damage possible
Grp 5	Elder Hawthorn Buddleia	C2	• Retained • Offsite • Removal of fencing • Removal of concrete surfacing • Installation of new fencing • Installation of gabion wall • Installation of acoustic bund and soft landscaping • Root, trunk and crown damage possible
Grp 6	Hawthorn Buddleia	C2	• Retained • Offsite • Removal of fencing • Removal of concrete surfacing • Installation of new fencing • Installation of flint wall • Installation of acoustic bund and soft landscaping • Root, trunk and crown damage possible
Grp 7	Corsican Pine	C2	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement
Grp 8	Corsican Pine Hazel Pedunculate Oak Flowering Cherry	B1+2	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement
Grp 9	Aspen Leyland Cypress	C1+2	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement
Grp 10	Poplar	U	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement
Grp 11	Field Maple Silver Birch Pedunculate Oak Common Ash Aspen	B1+2	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement
1	Common Ash *Fraxinus excelsior*	B1+2	• Retained • Unaffected by development proposals
2	Crack Willow *Salix fragilis*	C1+2	• Retained • Unaffected by development proposals

3	Goat Willow *Salix caprea*	C1+2	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement
4	Common Ash *Fraxinus excelsior*	U	• Retained • Offsite • Installation of CHP pipeline subject to specific method statement

6.4 Please note indicative route of underground CHP pipeline (located within existing access road), from the ERF heat station to the end of the site access road / junction with Ford Road is to be installed in the future as and when heat customers come forward. It is therefore recommended a separate method statement and/or tree protection plan is specific to this work and secured through planning condition.

7.0 TREE PROTECTION MEASURES

7.1 All site operations will be planned, implemented and supervised to prevent the following unless otherwise agreed within this report:

- Root severance
- Damage to the bark, branches and trunks
- Compaction of the soil within the Construction Exclusion Zone
- Alterations in soil level
- Soil contamination by phytotoxic materials such as herbicides, petrol, oils, diesel, cement and concrete washings or other construction additives

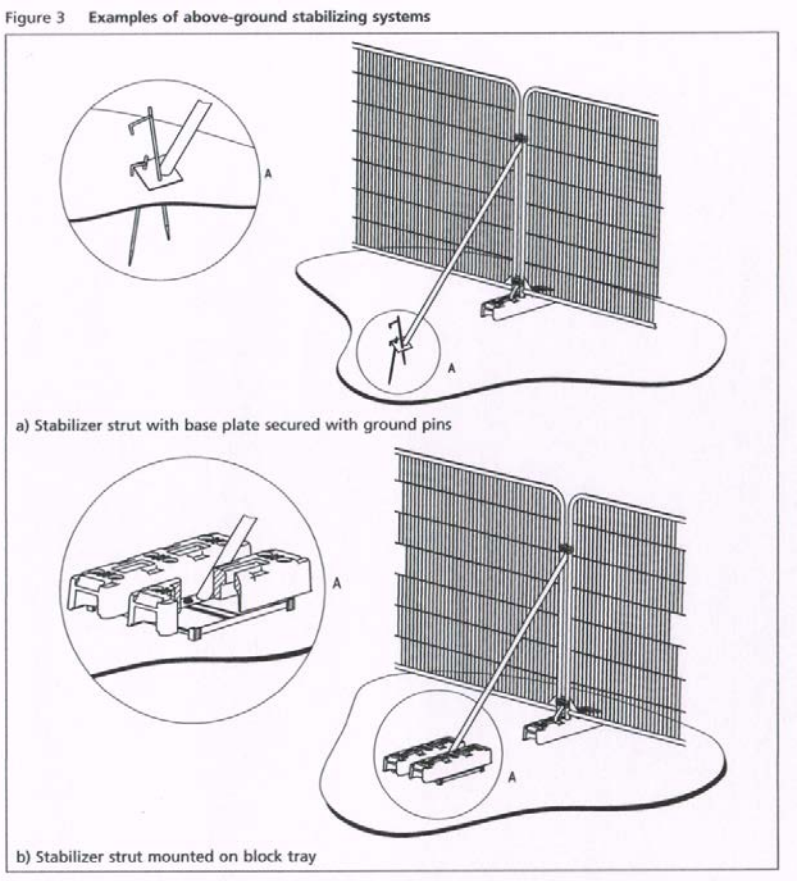
7.2 Before starting any site works in relation to this development proposal, tree protection will be installed in accordance with Tree Protection Plan CBA11322.02A TPP (appended at CB3). This will occur immediately following the completion of tree works and prior to any site preparation works starting.

7.3 A copy of the Tree Protection Plan CBA11322.02A TPP will be kept on site for an immediate reference for all site operatives.

7.4 Given the nature of the site and the proposed works, installing the following protective barrier as indicated on Tree Protection Plan CBA11322.02A TPP will protect the retained trees. It is recommended that the appropriate barrier will consist of a robust barrier where it (the barrier) is resistant to impact and requires a positive or considered movement/adjustment by contractors of the barrier to adjust its position.

7.5 The robust barrier will consist of weld mesh panels coupled together with two clasps fastened from the inside, mounted on rubber feet which are secured into position with ground pins or similar. The weld mesh panels will be stabilised by supporting struts secured in position with ground pins (see Figure 1 below).

Figure 1: Tree Protective Barrier example



8.0 PRE-DEVELOPMENT TREE WORKS

8.1 Once full planning has been granted and any detail for planning conditions have been agreed by West Sussex County Council, all tree works will be undertaken prior to the commencement of site preparation and construction works.

8.2 **All permitted or approved tree work** should be carried out in accordance with the British Standard *"Recommendations for Tree Work"* BS3998:2010, by suitably qualified and experienced professional arborists. Under no circumstances shall site personnel undertake any tree pruning operations. All tree surgery works should be carried out prior to the development of the site, and erection of protective barriers.

8.3 Consideration should be given to the timing of any tree works to avoid the active growing period of trees. Therefore, all tree work should ideally be carried out during the dormant period from November through to February and then again from June to August.

8.4 Due to the bird-nesting season, considered to be from 1st March through to the 31st July (Natural England) depending on weather conditions, consideration must also be given to the potential for nesting birds. It is advised that, where

tree work is to be carried out within these months that an ecologist be consulted to:

- Complete or advise on a pre-works survey that needs to be carried out by a suitably competent person. As a general rule, it should be assumed that birds will be nesting in trees, and it is down to contactors to assess, record and confirm that any works carried out in the management of trees and other vegetation has not disturbed actively nesting birds.

- Ground vegetation, and therefore ground nesting birds, can often be overlooked by tree workers so additional care and controls should be taken when access and egress to the work site may also cause disturbance or damage to a nesting site. This is also true for retained trees on site as the removal of adjacent trees or remedial works on a tree may lead to an established nest being abandoned, exposed to the elements or predation. This action is also a breach of the Act and therefore could lead to prosecution due to the infringement of the Wildlife and Countryside Act 1981 and breaching the Conservation of Habitats and Species Regulations 2010 (as amended).

8.5 Although not apparent at the time of the site visit, consideration should also be given to the presence of bats. It is understood from the project manager that a site assessment has been undertaken for bats. The ecology chapter of the ES states: 'The three buildings and scattered trees within the proposed development area were surveyed for their potential to support roosting bats and were all assessed as having negligible potential. No evidence of roosting bats was encountered. The habitats within the proposed development area are of negligible value to foraging bats due to their small size and isolated nature. Habitats adjacent to the site are largely open and of low value to foraging bats. There is poor connectivity between the site and the wider landscape.' Please cross-reference to the 'Natural heritage chapter of the ES / Chapter 13' for further information on bats at the site.

8.6 Should additional tree works become apparent during the construction process written consent will be required from West Sussex County Council tree team prior to these additional works being undertaken.

8.7 All tree works that are required to facilitate the development are detailed within the Tree Works Schedule appended at CB4.

9.0 UTILITIES AND SERVICES

9.1 Where there are any existing utilities or services within the RPA of retained trees that need to be made redundant, they will not be chased out, but cut at the edge of any structure/root protection area and left *in- situ.* Cabling will only be recovered from beneath a root protection area where it is located in ducting, and can be removed by winching from an existing service manhole beyond the root protection area.

9.3 Existing service pipes and ducts, where they are located within the rooting area of retained trees and will no longer be required, will be made redundant either by pipe bursting or by filling with an inert material such as foamed concrete.

9.4 Please refer to ES proposals chapter information (para 3.25 – 3.41) where the project has outlined the principles of the services and drainage requirements for the project and will route services outside of tree protection areas.

10.0 SITING OF TEMPORARY OFFICES, TOILETS AND MATERIAL STORAGE COMPOUNDS

10.1 It is anticipated that all storage of materials and deliveries will make use of the existing areas of the site outside and away from retained tree's root protection areas, in order to avoid unnecessary damage to tree roots or crowns and as per the phasing details of the project.

10.2 Measures will be in place to avoid chemical spills – an outline Construction Environmental Management Plan (CEMP) will be submitted with the application and it is anticipated that a detailed CEMP will be conditioned as part of a planning approval to secure this detail.

11.0 GENERAL CONSIDERATIONS WITHIN AND OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

11.1 The following prohibitions shall apply:

- No construction activity will occur within the root protection areas of retained trees unless otherwise stated in this report or agreed in writing with the Planning Case Officer/Tree Officer of West Sussex County Council prior to the specific activity taking place.

- It is understood fires will not take place on site and therefore there is no risk of fire damage occurring to retained trees.

11.2 In addition to the above, further precautions are necessary:

- Materials which will contaminate the soil e.g. concrete mixing, diesel oil and vehicle washings, shall not be discharged within 10 metres of the tree stem. This should take into consideration the topography of the site and slopes, to avoid materials such as concrete washings running towards trees.

- Notice boards, telephone cables or other services shall not be attached to any part of the tree (see appendix CB5 Common Causes of Damage During Construction Works)

12.0 REMOVAL OF BUILT FORM AND HARD SURFACES IN CLOSE PROXIMITY TO RETAINED TREES

12.1 Removal of existing surfacing, built forms or other excavations within the CEZ of retained trees, must be undertaken by hand (where feasible and in line with Health and Safety polices) to avoid any surface root damage, and shall be supervised on-site by the retained arboricultural consultant. Machines maybe used under arboricultural site supervision to lift and break the hard surfacing.

12.2 Any removal of hard surfacing, built form or other excavations in close proximity to trees will be undertaken by working only from the existing hard surface or protected ground area. The required work should then be completed with hand operated tools or appropriate machinery, but under the supervision of an arboriculturist. Any machinery or equipment to be used will need to be lightweight and run on additional ground protection or working from the existing hard standing only.

12.3 If the area of the zone of protection around the retained trees is to be left following the removal of the existing hard surface, and before a new hard surface is laid, or the area receives soft landscaping treatment, then tree protection MUST be correctly re-established immediately the hard surface removal work has been completed.

12.4 If there is a delay, for whatever reason, and the area that was previously protected by hard surfacing is left exposed awaiting a new surface, a temporary surface must be implemented, and/or Hessian sacking must be placed over any exposed roots.

13.0 SOFT LANDSCAPING WORKS

13.1 Any soft landscaping works within the development area will be in accordance with the approved landscape plan, and any specification of such works approved by West Sussex County Council.

13.2 Landscaping will accord with following requirements:

- Landscaping works are to be carried out within the root protection areas of retained trees at an appropriate time to provide the planting with the best opportunity to survive.
- All traffic, machine and pedestrian must be kept to an absolute minimum to complete the landscape installation works
- Bunds will be created close to or within root protection areas of trees, mostly on areas of existing built form. It is advised that the works to create the bund and/or remove the existing built form in particular for Group 1 is arboriculturally supervised to ensure that the initial ground works are completed in a fashion that is sympathetic to tree roots that may be exposed with roots >25mm are retained.

- Excavation of planting pits within the RPA can cause serious harm to the root system of retained trees. Planting pits within the RPA of retained trees will be excavated by hand to avoid roots greater than 25mm and masses of smaller roots.

Figure 2:

Root severance as a result of planting within RPA

Planting Trees and Shrubs. Watson G. W. and Himelick E. B. 1997

- If any planting pits are required within the root protection areas of retained trees, these will be dug by hand and with care avoiding roots greater than 25mm diameter or masses of smaller roots.

- Any surface mulch will consists of well-composted material such as bark or wood chips. This is necessary to avoid potential nutrient loss from the soil, such as Nitrogen, as the mulch breaks down, as nutrient loss can be detrimental to the health and longevity of retained trees.

- All work specified in the approved landscaping scheme shall be carried out in Phase 3 of the project with planting being undertaken at the most appropriate time for good establishment of the soft landscaping and as agreed through any planning conditions.

- Any existing trees shown to be retained, or trees and shrubs to be planted as part of the landscaping scheme that are removed, die, become severely damaged beyond recovery or diseased within 2-5 years of the completion of the development (dependent on planning Conditions), shall be replaced within the next planting season with trees or shrubs of appropriate size and species that complement the existing tree stock. Where the trees in question are protected by planning controls, West Sussex County Council should be informed and necessary arrangements made prior to such work.

14.0 CONCLUSION

14.1 The proposals for the Ford energy recovery facility (ERF) and waste sorting and transfer facility (WSTF) have been assessed by a qualified and experienced arboricultural consultant in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.

14.2 All the trees and group of trees can be retained to implement a full planning permission. Facilitative pruning will be required to two of the groups and this is not thought to be detrimental to the health or wider visual aspect of the groups.

14.3 The landscape proposals will seek to strengthen the vegetation around the perimeter of the development looking to enhance the quality and increase the number of trees, shrubs and vegetation around the site.

14.4 It is our opinion that the proposed development will not have a detrimental effect on the local visual amenity offered by the trees and groups around the site but gives the opportunity to increase and enhance the tree cover through the proposed landscaping scheme.

14.5 CBA Trees believes the trees highlighted for retention within this report can be retained without undue stress on their long-term health.

Appendices

CB1 Tree Survey Schedule and Tree Survey Plan CBA11322.01A TSP
CB2 Root Protection Area Schedule
CB3 Tree Protection Plan CBA11322.02B TPP
CB4 Tree Works Schedule
CB5 Qualifications and Experience


CB1

The Professional Arboricultural Consultancy

TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.
- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

  Y = young trees
  SM = semi-mature trees
  EM = early mature trees
  M = mature trees
  OM = over-mature trees

- An assessment of a tree's physiological condition is defined as:

  Good = fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
  Fair = fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
  Poor = a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
  Dead = dead

- An assessment of a tree's structural condition is defined as:

  Good = no significant structural defects
  Fair = structural defects which could be alleviated through remedial tree surgery or management practices
  Poor = structural defects which cannot be alleviated through tree surgery or management practices
  Dead = dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees 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	• 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) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • 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			**DARK RED**
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; 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)	**LIGHT GREEN**
Category B	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded 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 value or other cultural value	**MID BLUE**
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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	**GREY**

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either "*full ground level inspection"* or "*climbing inspection required".* There may also be a further reference to the need for "*decay detection equipment"* to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

TREE SURVEY REPORT (BS5837:2012)	
Site:	Ford Circular Technology Park
Date:	06 January 2020
Consultant:	Stefan Rose BSc (Hons), TechCert (Arbor.A), Tech.Arbor.A
Tagged:	No

Notes:-

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.

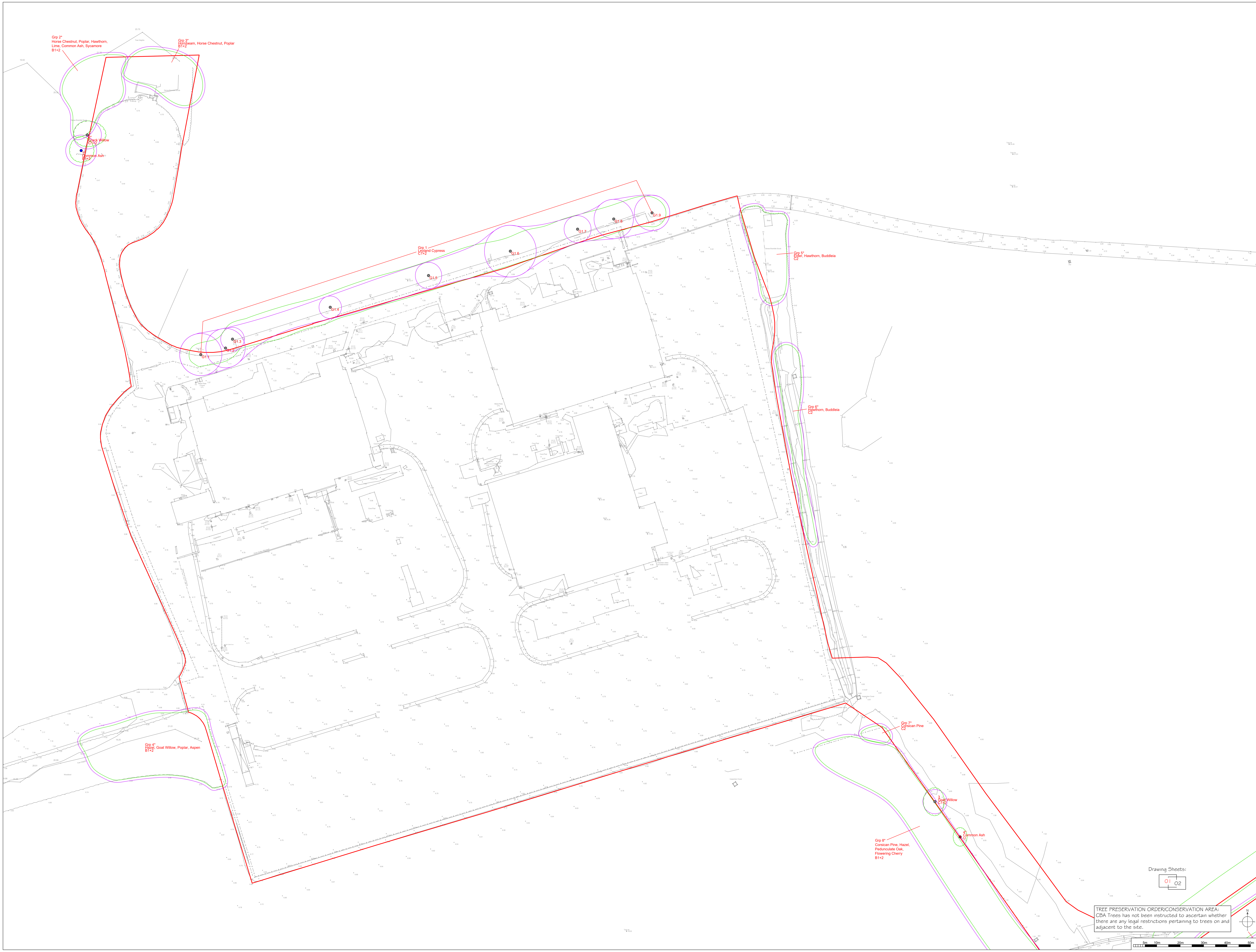
TREE PRESERVATION ORDER/CONSERVATION AREA:
CBA Trees has not been instructed to ascertain whether there are any legal restrictions pertaining to trees on and adjacent to the site.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 1	Leyland Cypress *X Cuprocyparis leylandii*	11	MS	Various	-	-	-	-	-	-	-	-	EM	Fair	Fair Linear group growing along side of existing concrete road Many trees have dieback and major deadwood in crown Many trees multi-stemmed at various heights Ivy on trunk Storm damage in crowns Provides good visual separation to warehouse but individually poor trees	Remove major deadwood	10+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.1	-	-	-	750	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.2	-	-	-	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.3	-	-	-	420	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.4	-	-	-	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.5	-	-	-	470	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.6	-	-	-	920	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.7	-	-	-	480	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.8	-	-	-	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G1.9	-	-	-	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grp 2	Horse Chestnut Poplar Hawthorn Lime Common Ash Sycamore	16	S	350	-	-	-	-	-	-	-	-	EM	Fair	Fair Trunk and crown shapes distorted due to group pressure Epicormics on trunks and in crowns Ivy on some trunks Low hanging branches Minor deadwood in crowns	No works required at time of survey	20+	B1+2
Grp 3	Hornbeam Horse Chestnut Poplar	18	S	680	-	-	-	-	-	-	-	-	M	Good	Fair Ivy on trunks and in crowns Wildlife holes in ground to south Bunker to south of group Minor deadwood in crowns	Sever ivy Remove deadwood over footpath within 12 months	20+	B1+2
Grp 4	Hazel Goat Willow Poplar Aspen	12	S	250	-	-	-	-	-	-	-	-	SM	Good	Fair Offsite group Closely planted group Trunk and crown shapes distorted due to group pressure Overhanging branches cut back Some multi-stemmed Low hanging branches	No works required at time of survey	20+	B1+2
Grp 5	Elder Hawthorn Buddleia	3	S	150	-	-	-	-	-	-	-	-	SM	Good	Fair Growing on bank Natural regeneration Possible Japanese Knotweed growing in group	No works required at time of survey	10+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 6	Hawthorn Buddleia	3	S	150	-	-	-	-	-	-	-	-	SM	Good	Fair Growing on bank Natural regeneration	No works required at time of survey	10+	C2
Grp 7	Corsican Pine	9	S	210	-	-	-	-	-	-	-	-	SM	Good	Fair Closely planted cluster of trees Crown shapes distorted due to group pressure Appears to grow offsite Soil disturbance to east	No works required at time of survey	20+	C2
Grp 8	Corsican Pine Hazel Pedunculate Oak Flowering Cherry	9	S	200	-	-	-	-	-	-	-	-	SM	Good	Fair Offsite group Unable to verify health and safety due to no access Growing on bank	No works required at time of survey	20+	B1+2
Grp 9	Aspen Leyland Cypress	16	S	300	-	-	-	-	-	-	-	-	EM	Good	Fair Offsite linear group Crown shapes distorted due to group pressure	No works required at time of survey	20+	C1+2
Grp 10	Poplar	4	S	320	-	-	-	-	-	-	-	-	EM	Fair	Poor Offsite linear group growing along side of existing road Decay at base for some Topped at 4m and regularly maintained Old pruning wounds on trunks and in crowns Epicormics on trunks and in crowns	No works required at time of survey	<10	U
Grp 11	Field Maple Silver Birch Pedunculate Oak Common Ash Aspen	14	S	350	-	-	-	-	-	-	-	-	EM	Good	Fair Offsite group Ivy on some trunks Trunks and crown shapes distorted due to group pressure Minor deadwood in crowns Old pruning wounds on trunks and in crowns	No works required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
1	Common Ash *Fraxinus excelsior*	15	S	550	6.0	5.5	5.0	5.0	1.0	2.0	1.0	1.0	EM	Fair	Fair Ivy on trunk Bifurcated at 4m above ground level South west trunk bifurcated again at 5m and 7m above ground level Low hanging branches Wildlife hole in ground to north of trunk Minor deadwood in crown	No works required at time of survey	20+	B1+2
2	Crack Willow *Salix fragilis*	11	MS<5	500	6.0	8.0	5.0	6.0	2.0	1.0	3.0	3.0	EM	Fair	Fair Multi-stemmed at 1m above ground level Hawthorn growing to south Bark wound at base on north east of trunk Crown shape distorted due to group pressure Minor deadwood in crown	No works required at time of survey	20+	C1+2
3	Goat Willow *Salix caprea*	8	MS<5	430	6.0	4.0	6.0	5.0	2.0	2.0	2.0	2.0	M	Fair	Fair Bifurcated at ground level Basal suckers Epicormics on trunk and in crown Soil disturbance to east Probable root damage on east side	No works required at time of survey	10+	C1+2
4	Common Ash *Fraxinus excelsior*	7	MS<5	220	4.0	3.0	4.0	3.0	2.0	2.0	2.0	2.0	SM	Fair	Poor Bifurcated at 1m above ground level Soil disturbance on east side Appears to have major root damage on east side Lower branches poorly cut and damaged	Advise removal	<10	U



TREE PRESERVATION ORDER/CONSERVATION AREA:
CBA Trees has not been instructed to ascertain whether there are any legal restrictions pertaining to trees on and adjacent to the site.

KEY

- ROOT PROTECTION AREA (RPA)
- CROWN SPREAD
- CATEGORY
- TREE NUMBER
- SPECIES
- CATEGORY

13
Birch
B2

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

NOTE: Tree/group numbers marked with an * have approximate locations.

JOB TITLE
Ford Energy From Waste Ltd

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA11322.01A TSP

BASE PLAN DRAWING No.
Site survey 2013_updated 2016

SCALE 1-500@A0

DRAWN AM

DATE January 2020

CBA Trees
East Lodge, Leylands Business Park, Colden Common, Winchester. S021 1TH
A Tel: 02380 986229

Drawing Sheets:

01 02

TREE PRESERVATION ORDER/CONSERVATION AREA:
CBA Trees has not been instructed to ascertain whether there are any legal restrictions pertaining to trees on and adjacent to the site.

N W E S

5m 10m 20m 30m 40m 50m

KEY

ROOT PROTECTION AREA (RPA)
CROWN SPREAD
CATEGORY
TREE NUMBER
SPECIES
CATEGORY

13
Birch
B2

CATEGORY A TREES
CATEGORY B TREES
CATEGORY C TREES
CATEGORY U TREES

NOTE: Tree/group numbers marked with an * have approximate locations.

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Ford Energy From Waste Ltd

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA11322.01A TSP

BASE PLAN DRAWING No.
Site survey 2013_updated 2016

SCALE 1-500@A0

DRAWN AM

DATE January 2020

CBA Trees.
East Lodge, Leylands Business Park, Colden Common, Winchester. SO21 1TH
A Tel: 02380 986229


CB2

BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE	
Site:	Ford Circular Technology Park
Date:	06 January 2020
Consultant:	Stefan Rose *BSc (Hons), TechCert (Arbor.A), TechArbor.A*

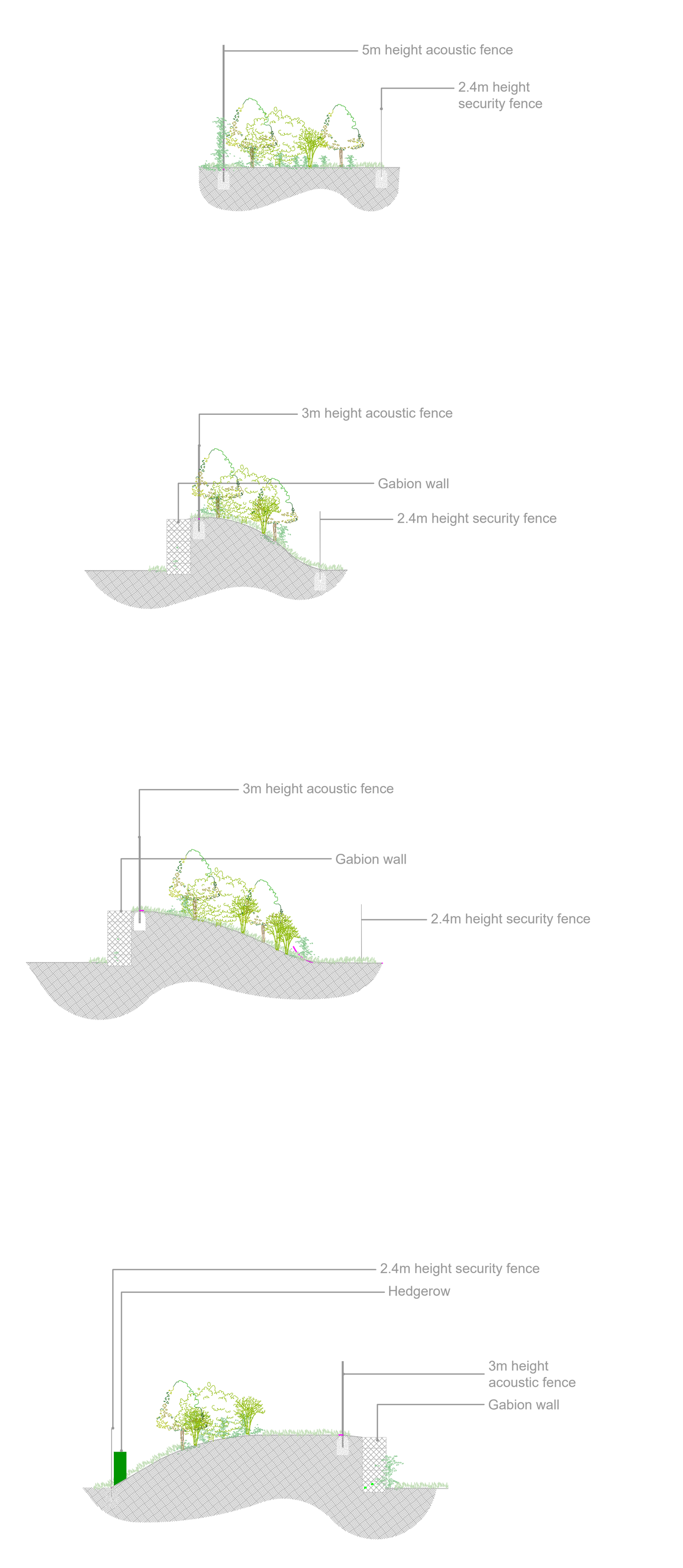
Notes:
1. This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
2. At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
3. For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m2 in accordance with Section 4.6.1 of BS5837.2012.

TREE PRESERVATION ORDER/CONSERVATION AREA:
CBA Trees has not been instructed to ascertain whether there are any legal restrictions pertaining to trees on and adjacent to the site.

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 1	Leyland Cypress X Cuprocyparis leylandii	C1+2	MS	Various	-	-
G1.1	-	-	-	750	9.00	254.50
G1.2	-	-	-	700	8.40	221.70
G1.3	-	-	-	420	5.04	79.81
G1.4	-	-	-	400	4.80	72.39
G1.5	-	-	-	470	5.64	99.95
G1.6	-	-	-	920	11.04	382.95
G1.7	-	-	-	480	5.76	104.24
G1.8	-	-	-	700	8.40	221.70
G1.9	-	-	-	630	7.56	179.58
Grp 2	Horse Chestnut Poplar Hawthorn Lime Common Ash Sycamore	B1+2	S	350	4.20	55.42
Grp 3	Hornbeam Horse Chestnut Poplar	B1+2	S	680	8.16	209.21

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 4	Hazel Goat Willow Poplar Aspen	B1+2	S	250	3.00	28.28
Grp 5	Elder Hawthorn Buddleia	C2	S	150	1.80	10.18
Grp 6	Hawthorn Buddleia	C2	S	150	1.80	10.18
Grp 7	Corsican Pine	C2	S	210	2.52	19.95
Grp 8	Corsican Pine Hazel Pedunculate Oak Flowering Cherry	B1+2	S	200	2.40	18.10
Grp 9	Aspen Leyland Cypress	C1+2	S	300	3.60	40.72
Grp 10	Poplar	U	S	320	-	-
Grp 11	Field Maple Silver Birch Pedunculate Oak Common Ash Aspen	B1+2	S	350	4.20	55.42
1	Common Ash Fraxinus excelsior	B1+2	S	550	6.60	136.87
2	Crack Willow Salix fragilis	C1+2	MS<5	500	6.00	113.11
3	Goat Willow Salix caprea	C1+2	MS<5	430	5.16	83.66
4	Common Ash Fraxinus excelsior	U	MS<5	220	-	-


CB3



1-200

- Fastigiate Specimen Trees
- Specimen Trees
- Scrub Mix
- Conservation Grassland
- Conservation Grassland / Pollinator Meadow
- Drifts of Flint Gravel (or Seashell Mulch)
- Paving
- Flint Wall
- Gabion Wall
- Acoustic Fence
- Hedgerow
- Ornamental Pond (Designed to support wildlife)
- Nature Trail Path
- Bench Seating

Drawing Sheets: 01 02

TREE PRESERVATION ORDER/CONSERVATION AREA: CBA Trees has not been instructed to ascertain whether there are any legal restrictions pertaining to trees on and adjacent to the site.

5m 10m 20m 30m 40m 50m

KEY

ROOT PROTECTION AREA (RPA)
CROWN SPREAD
CATEGORY
TREE NUMBER
SPECIES
CATEGORY

13 Birch B2

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

NOTE: Tree/group numbers marked with an * have approximate locations.

TREES TO BE RETAINED AND PROTECTED

TREE PROTECTION BARRIER

Many groups are offsite/ outside of the land ownership boundary; RPAs will be protected accordingly.

JOB TITLE
Ford Energy From Waste Ltd

DRAWING TITLE
Tree Protection Plan

CBA DRAWING No.
CBA11322.02B TPP

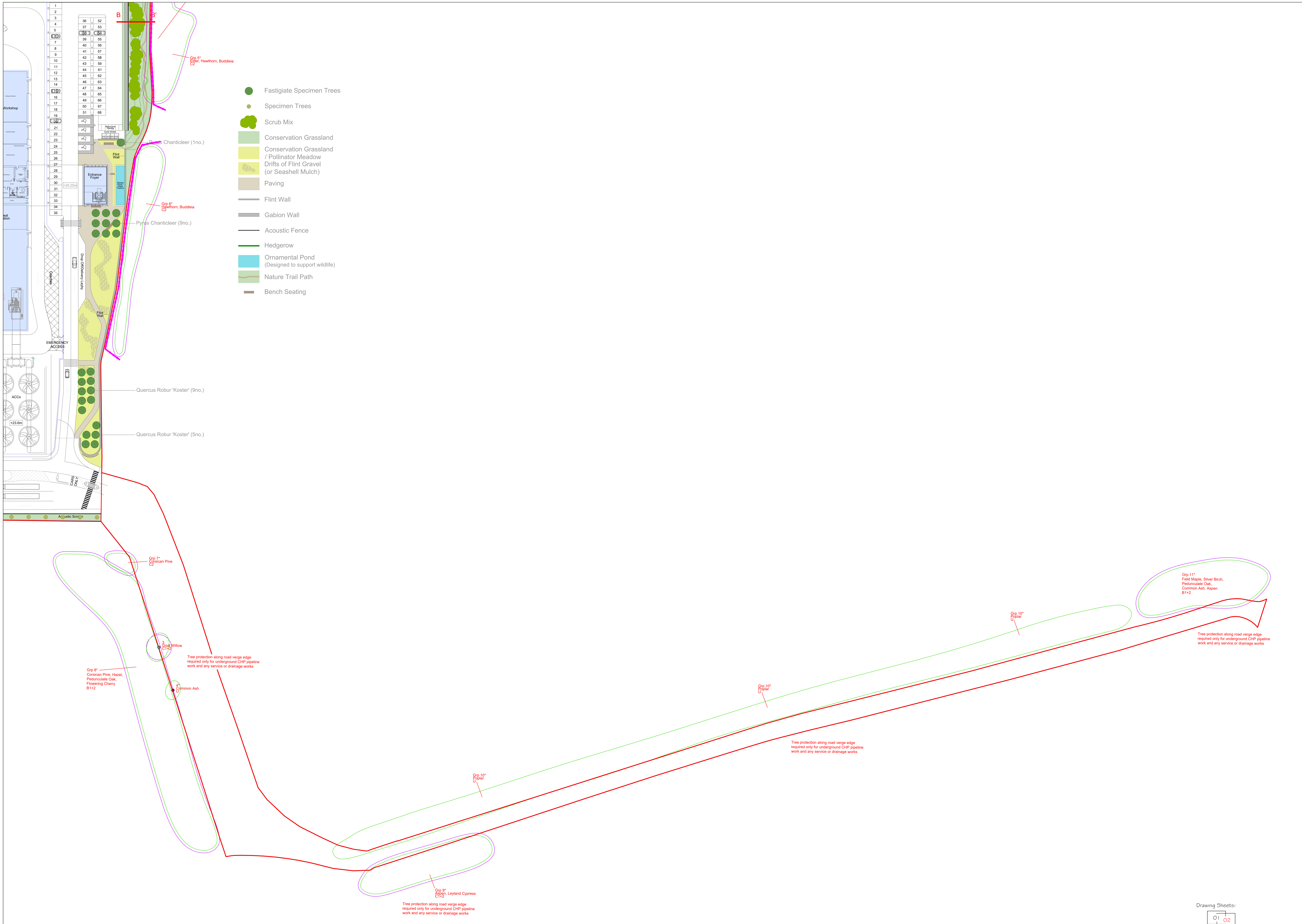
BASE PLAN DRAWING No.
2829-01-SK002 Rev D

SCALE 1-500@A0

DRAWN AM

DATE June 2020

CBA Trees
East Lodge, Leylands Business Park, Colden Common, Winchester. SO21 1TH
A Tel: 02380 986229


B
B'
Grp 5*
Elder, Hawthorn, Buddleia
C2
Pyrus Chanticleer (1no.)
Motorcycle Parking
Cycle Shelter
Flint Wall
Entrance Foyer
Raised Pond / Water Feature
Grp 6*
Hawthorn, Buddleia
C2
Pyrus Chanticleer (9no.)
Workshop
EMERGENCY ACCESS
ACCs
+23.6m
Quercus Robur 'Koster' (9no.)
Quercus Robur 'Koster' (5no.)
Acoustic Screen
Fastigiate Specimen Trees
Specimen Trees
Scrub Mix
Conservation Grassland
Conservation Grassland / Pollinator Meadow
Drifts of Flint Gravel (or Seashell Mulch)
Paving
Flint Wall
Gabion Wall
Acoustic Fence
Hedgerow
Ornamental Pond (Designed to support wildlife)
Nature Trail Path
Bench Seating
Grp 7*
Corsican Pine
C2
3
Goat Willow
C1+2
Tree protection along road verge edge required only for underground CHP pipeline work and any service or drainage works
Grp 8*
Corsican Pine, Hazel, Pedunculate Oak, Flowering Cherry
B1+2
4*
Common Ash
U
Grp 10*
Poplar
U
Grp 10*
Poplar
U
Grp 10*
Poplar
U
Tree protection along road verge edge required only for underground CHP pipeline work and any service or drainage works
Grp 11*
Field Maple, Silver Birch, Pedunculate Oak, Common Ash, Aspen
B1+2
Tree protection along road verge edge required only for underground CHP pipeline work and any service or drainage works
Grp 9*
Aspen, Leyland Cypress
C1+2
Tree protection along road verge edge required only for underground CHP pipeline work and any service or drainage works

Drawing Sheets:

01 02

TREE PRESERVATION ORDER/CONSERVATION AREA:
CBA Trees has not been instructed to ascertain whether there are any legal restrictions pertaining to trees on and adjacent to the site.

5m 10m 20m 30m 40m 50m

KEY

ROOT PROTECTION AREA (RPA)
CROWN SPREAD
CATEGORY
TREE NUMBER
SPECIES
CATEGORY

13
Birch
B2

CATEGORY A TREES
CATEGORY B TREES
CATEGORY C TREES
CATEGORY U TREES

NOTE: Tree/group numbers marked with an * have approximate locations.

TREES TO BE RETAINED AND PROTECTED

TREE PROTECTION BARRIER

Many groups are offsite/ outside of the land ownership boundary; RPAs will be protected accordingly.

JOB TITLE
Ford Energy From Waste Ltd

DRAWING TITLE
Tree Protection Plan

CBA DRAWING No.
CBA11322.02B TPP

BASE PLAN DRAWING No.
2829-01-SK002 Rev D

SCALE 1-500@A0

DRAWN AM

DATE June 2020

CBA Trees.
East Lodge, Leylands Business Park, Colden Common, Winchester. SO21 1TH
A Tel: 02380 986229


CB4

TREE WORKS SCHEDULE

Site:	Ford Energy Recovery Facility and Waste Sorting and Transfer Facility, Ford Circular Technology Park		
Date:	May 2020	**Consultant:**	Stefan Rose *BSc (Hons), Tech Cert ArborA, TechArborA*

Tree No.	Species	Recommended Works
Grp 1	Leyland Cypress *X Cuprocyparis leylandii*	• Cut and lift crown to provide 3m ground level clearance for the 2.4m security fence installation • Remove dead and broken branches
Grp 2	Horse Chestnut Poplar Hawthorn Lime Common Ash Sycamore	• No works required for planning application
Grp 3	Hornbeam Horse Chestnut Poplar	• Sever ivy • Remove deadwood over footpath within 12 months
Grp 4	Hazel Goat Willow Poplar Aspen	• Cut and lift crown on western side to provide 3m ground level clearance for 2.4m security fence installation
Grp 5	Elder Hawthorn Buddleia	• Cut and lift crown on western side to provide 3m ground level • clearance for 2.4m security fence installation • Cut and lift to clear nature trail
Grp 6	Hawthorn Buddleia	• No works required for planning application
Grp 7	Corsican Pine	• No works required for planning application
Grp 8	Corsican Pine Hazel Pedunculate Oak Flowering Cherry	• No works required for planning application
Grp 9	Aspen Leyland Cypress	• No works required for planning application
Grp 10	Poplar	• No works required for planning application
Grp 11	Field Maple Silver Birch Pedunculate Oak Common Ash Aspen	• No works required for planning application
1	Common Ash *Fraxinus excelsior*	• No works required for planning application
2	Crack Willow *Salix fragilis*	• No works required for planning application
3	Goat Willow *Salix caprea*	• No works required for planning application
4	Common Ash *Fraxinus excelsior*	• No works required for planning application

- It is advised that all remedial tree works such as pruning is carried out between July and September or November and February. Tree works should also avoid the season for nesting birds.
- All tree works should be carried out in accordance with current best practice guidelines and BS3998: 2010 – Tree Works. Only natural target pruning method to be used.
- We recommend the use of an Arboricultural Association Approved Contractor or an ISA Certified Arborist/Tree Worker suitably insured and experienced to carry out the tree works.


CB5

The Professional Arboricultural Consultancy

Qualifications of
Stefan Rose
Principal Consultant

Stefan Rose *BSc (Hons), TechCert (Arbor.A), TechArbor.A* joined CBA Trees in 1998 as a junior surveyor and having gained extensive knowledge and a wealth of experience over the years, has progressed to Principal Consultant. He has considerable experience in working as a locum for Local Authorities, assessing new and extant Tree Preservation Orders, and continues to work on a number of major development projects nationwide.

As our Principal Consultant Stefan undertakes a full range of arboricultural services from health and safety audits to BS5837:2012 tree surveys, providing expert advice and guidance on initial feasibility site assessments to full scale planning applications. He is accomplished at producing implication assessments and method statements for the submission of planning applications, working with both individual home owners and within multi-disciplinary teams to achieve successful arboricultural outcomes.