Ravencroft Arboricultural Services

Horsford Pits
Woodland Management

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INTRODUCTION

Ravencroft Arboricultural Services were instructed by Virginia Sokalsky on behalf of Horsford Parish Council to provide woodland management guidance covering trees at Pyhurn Pit, Horsford Green Lane Watering pit, the former land fill pit Green Lane and Dog lane community woodland.

The pits have been managed by Horsford Parish council since 1997.

Management recommendations have been provided as the result of my walkthrough survey undertaken during my initial site meeting with Virginia and subsequent meeting with Virginia and Matt Davies from Norwich Fringe Project.

Our company, Ravencroft Tree Services Ltd, have been involved with past management of Pyhurn pit as contractors since the mid 1990s and currently provide the Quantified Tree Risk Assessment (QTRA) of this woodland as well as other sites under Horsford Parish Council Management.

The production of this report has been greatly assisted by Matt Davies (Norwich Fringe Project) who has been actively involved with the management of these sites since their initial establishment and planting, therefore his site knowledge has been invaluable in the production of this document.

This report is confidential to the client and their professional advisers and no liability is accepted to any other parties. It is not to be disclosed to other parties without the written consent of Ravencroft Arboricultural Services. No liability is accepted for the contents of the report, other than to that of the client.

Additional appendices provide guidance on how to implement various tree management methods, many of which fall within guidance provided within the recently reviewed British Standard for Tree Work Recommendations BS3998:2010.

RATIONALE

To provide management guidance to assist in the continued development of the various woodland pits for the benefit of wildlife and ever growing community.

SITES

The four sites consist of varying soil types, ranging from free draining sandy heathland soils, a mix of various other imported soil grades associated with past land infill, to retained scrapes and ponds surrounded by wet marshy ground providing a variety in rich habitats, especially for amphibians.

The sites by way of their rural location offer year round access, however this may not always be accessible for the less well footed, especially disabled persons. Although the sites are generally flat, access especially during winter months may be impeded as a result of the adjoining rights of way being wet, muddy and deeply rutted, especially as a result of inconsiderate use of Green Lane off road 4x4s, resulting in making roads near impassable by foot and restricting any normal vehicle access which the elderly and disabled would rely on.

Green Lane is a un surfaced county road but should be up to a level for all to enjoy, not just a minority. Concerns as to the extent of significant damage and breach of adjacent Forestry commission land needs to be bought to the attention of the County Council and Forestry Commission. Current funding to repair such damage may be an uphill task to secure and therefore it may require local volunteers to provide materials and labour to address. Another option is to a Temporary Traffic Regulation Order (TRO). TROs are legal documents that restrict or prohibit the use of the highway network in line with The Road Traffic Regulation Act 1984.

The pits / woodlands provide free access for members of the community allowing persons to simply walk, exercise or take in the tranquility of these remote wetland and wooded sites, all of which support a wealth of wildlife and plant bio diversity, enhanced by their proximity to mature and established deciduous and coniferous woodland plantations. In addition Pyehurn wood also provides a meeting point for recreational cycling activities by way of utilising and modifying established holes and hollows to create a cycle pump course.

Objective 1

The various sites already support a diversity of wildlife habitat without much management intervention, although the nature of the sites and their intended use for community access, still requires a level of active annual management to meet your duty of care in relation to health and safety, whilst ensuring the development and conservation value of the woodland is enhanced and access maintained for the benefit of all, this includes annual tree inspection.

No specific identification of flora or fauna has been undertaken to our knowledge.

Wherever possible, management should aim to retain tree canopy connectivity with adjacent mature woodlands for the benefits of wildlife, with the exceptions of creating specific glades and creating rides to enhance the biodiversity of a woodland by increasing the levels of light, rejuvenating individual trees and allowing shorter under canopy vegetation and shrubs to grow, thus creating more structural diversity and micro-habitats.

Whilst the young woodlands provide a level of wildlife habitat, a missing link is a lack of suitable nesting holes for tree dwelling birds & bats. These advanced features tend not to occur until the woodland and individual trees reach maturity by which time natural branch or stem failures may have become damaged by storms resulting in splits, fractures and natural hollow cavities. It would be desirable to increase nesting opportunities of which the following are two methods.

Creation of habitat features can be achieved by an experienced arborist replicating natural fractures and creating cavities which would otherwise take years to achieve. This type of work would be undertaken on a few selected trees within each of the woodland sites. This can be done for the benefit of both birds and bats. The main advantage of this type of work is that such works does not become a target for theft or vandalism which can be an issue with erecting bird or bat boxes within remote community sites. Our team of arborists are skilled operatives in replicating natural habitat features; we would be pleased to discuss the type of services offered if this is of interest.

During management works some lengths of cut timber, deadwood and brash should be retained to create habitat piles in certain areas to provide hideaways and over winter hibernation sites for various species.

Objective 2

Ensure regular monitoring of tree stock to gauge for any significant damage caused by grey squirrel, rabbit, deer or vandalism.

Maintain vigilance as to possible disease infection of tree stock, Ash die back as example

Identify suitable opportunities or locations to replant individual or groups of trees.

Continue with selected rotational coppicing of hazel and willow species

Management Guidance

Specific management guidance relating to each of the individual sites is addressed within the attached individual reports; with additional generic guidance notes included, relating to mature boundary trees and the presence of mature Ash trees which are a major cause of concern due to the ever increasing instances of ash die back.

Tree Works

Marking of trees for forthcoming winter works is best done when in leaf to aid identification and assessment of those trees requiring specific attention. This is especially useful when surveying ash trees for signs of ash die back. Marking should be undertaken by a competent Arboriculturist or Forester with experience of managing trees, especially infected ash trees.

Unless as an emergency, tree / ground works should be avoided during spring or summer month's to avoid disturbance to nesting birds and other European species.

RECYCLING 

All arisings produced as a result of the tree management are recyclable.

Timber is a valuable resource.

Timber as a result of felling or thinning even at a young age will make saleable firewood which can be sold off to offset some of the management cost.

Brash unwanted stems or branches are suitable for creation of habitat piles. Chipping may be appropriate for larger scale projects to manage excessive waste or where risk of arson of habitat piles is deemed unacceptable.

PRUNING GUIDANCE

PRUNING; detailed guidance provided in Appendix **2**

COPPICING; Detailed guidance provided in Appendix **3**

IVY CONTROL

Ivy, *Hedera helix,* is the only native British **evergreen** climbing shrub; it is not parasitic and does not directly affect the health of the trees it climbs.

Ivy retention upon trees is very desirable for the encouragement of wildlife. Ivy on mature trees can provide significant wildlife habitat value for birds and bats and therefore a percentage should always be retained around the site and adjacent boundary trees, unless specific management recommendations dictate otherwise, such as to aid future tree hazard inspection.

It can also advance the physiological decline of trees when its development encapsulates a trees crown and blocks light through to the leaves, this reduces a trees ability to photosynthesise which in turn can gradually weaken the tree. This may be more noticeable in the case of a diseased or dying tree or where a trees growth rate and vigour may be slow or in decline, the ivy's more vigorous growth allows it to smother the tree.

Dense ivy coverage can increase the wind loading upon a tree or hedge thereby increasing the risk of failure. Our recommended management is to maintain an acceptable percentage of ivy upon selected trees and sections of hedge, by way of implementing rotational cutting of ivy around the lower stems of the host when coverage exceeds around 70% of its crown.

DEAD WOOD

Formation of dead wood is part of a trees natural shedding or retrenchment process as is decay and hollowing all of which provide significant benefits to wildlife, birds, bats and site ecology. Where safe to do so, a percentage should always be retained both standing and fallen to benefit the various species which rely on such dysfunctional wood.

Suitable lengths of dead wood should be retained within suitable areas of the site, this is especially useful for creating habitat piles to encourage or increase the presence of wildlife on site, especially in young plantations where the development of natural trunk cavities and suitable nesting holes in trees are absent due to the young age of the existing tree stock.

STUMP TREATMENT

Stumps left over from resulting works can cause a trip hazard or make maintenance within the woodland areas difficult, there retention should therefore be judged on location and risk posed to persons or maintenance vehicles and equipment and treated accordingly. The majority of stumps left within woodland compartments following tree removal will require no other management. Retained stumps, provides a means of locking carbon away, reducing carbon release into the atmosphere.

Stump re-growth from some species can become troublesome after trees have been felled, or allowed to freely sucker, especially in the case of Poplar or willows species. Unwanted re growth can be controlled by annual cutting, although more persistence species such as blackthorn may require treating with an approved translocated herbicide to prevent regrowth. Some invasive species may require more than one dose over several years to prevent re-growth. Herbicide application should only be carried out by trained and certificated persons holding a minimum of PA1 PA6 certification.

Stump Grinding

Stumps which present a trip hazard within footpaths or which may cause damage to grass or other grounds maintenance machinery should be reduced below ground by way of mechanical stump grinding. This treatment can be carried out on all stumps, however the cost of such works

may be restrictive, however instant results from grinding can be achieved without concerns over chemical application and its control and therefore grinding may be more site friendly and cost effective in the longer term.

ANIMAL DAMAGE

The long-term presence of rabbits can greatly affect the growth and development of young trees.

Vigilance as to damage inflicted by Deer is advised, as their ever increasing population can inflict considerable damage to young trees by browsing of bark removal from stems within a very short period of time.

Voles can also contribute to young tree stem damage and therefore early and continued management of grass from around the base of trees can reduce such occurrence.

Grey Squirrel

Grey squirrels (Sciurus carolinensis) have spread rapidly since their introduction into Great Britain in the late 19th century. They have a significant impact on woodland biodiversity and, in particular, the native red squirrel (Sciurus vulgaris). Grey squirrels have displaced red squirrels throughout most of England and Wales, central and southeast Scotland, and parts of Northern Ireland, through competition and disease. Grey squirrels also pose a threat to the sustainable management of woodlands through the damage they cause to trees by bark stripping. Such damage may lead to a loss of particularly vulnerable tree species (e.g. beech) within the canopy of woodlands and this may be accompanied by a decline in associated fungal and invertebrate fauna. In some areas it can act as a disincentive to the creation of new woodlands for timber because it reduces the value of the trees. In many areas of the UK, grey squirrels are unaffected by predation and therefore targeted control is often necessary to reduce their impact on woodlands and biodiversity.

Follow this link for further management guidance and control https://www.forestresearch.gov.uk/research/controlling-grey-squirrels-forests-and-woodlands-uk/

NEST BOXES

Due to the young age of the woodlands, it may be appropriate to create or install a range of bird and bat boxes within the woodland area to increase wildlife nesting and roost potential for both birds and bats.

HERB LAYER

Species which make up the herb layer throughout the woodland floor have not been evaluated. If this is an area of interest to you, and you would like further guidance on specie protection and enhancement, we suggest seeking advice from an ecologist.

THE LAW AFFECTING TREE WORK

Trees have a high potential to provide habitat for many European Protected Species, therefore it is important to make sure that any persons appointed to undertake works on your behalf, must be made aware of there responsibility to ensure instructed works are carried out in compliance with the Wildlife and Countryside Act (as amended). All works recommendations are expected to be carried out by fully qualified and insured arborists or arboricultural contractors working to British Standard 3998 (2010) Tree Work Recommendations.

Individual or group trees may be subject to Forestry Commission licensing, Planning, Conservation Area or Tree Preservation Order Regulations / Protection. Therefore prior to any works being instructed or undertaken, the appropriate licensing or permissions must be granted by the appropriate body to ensure all proposed works are in compliance with any applicable constraints.

Trees within conservation areas, the council requires 6 weeks notification of proposed tree works by way of a 211 notice, within conservation areas. Where trees are protected by a Tree Preservation Order, additional applications for works will need to be made to ensure compliance with the Town and Country Planning Act 1990. Trees which are dead or dangerous may be

exempt from the act. However we advise providing notification of at least five days prior to works, to the council's tree officer, to ensure compliance.

Larger scale felling works may be subject to a Forestry Commission Felling Licence and therefore we suggest seeking guidance from your Consultant prior to embarking on any such works and to factor in a realistic time frame for their consideration of management proposal before licensing is issued.

Richard Ravencroft

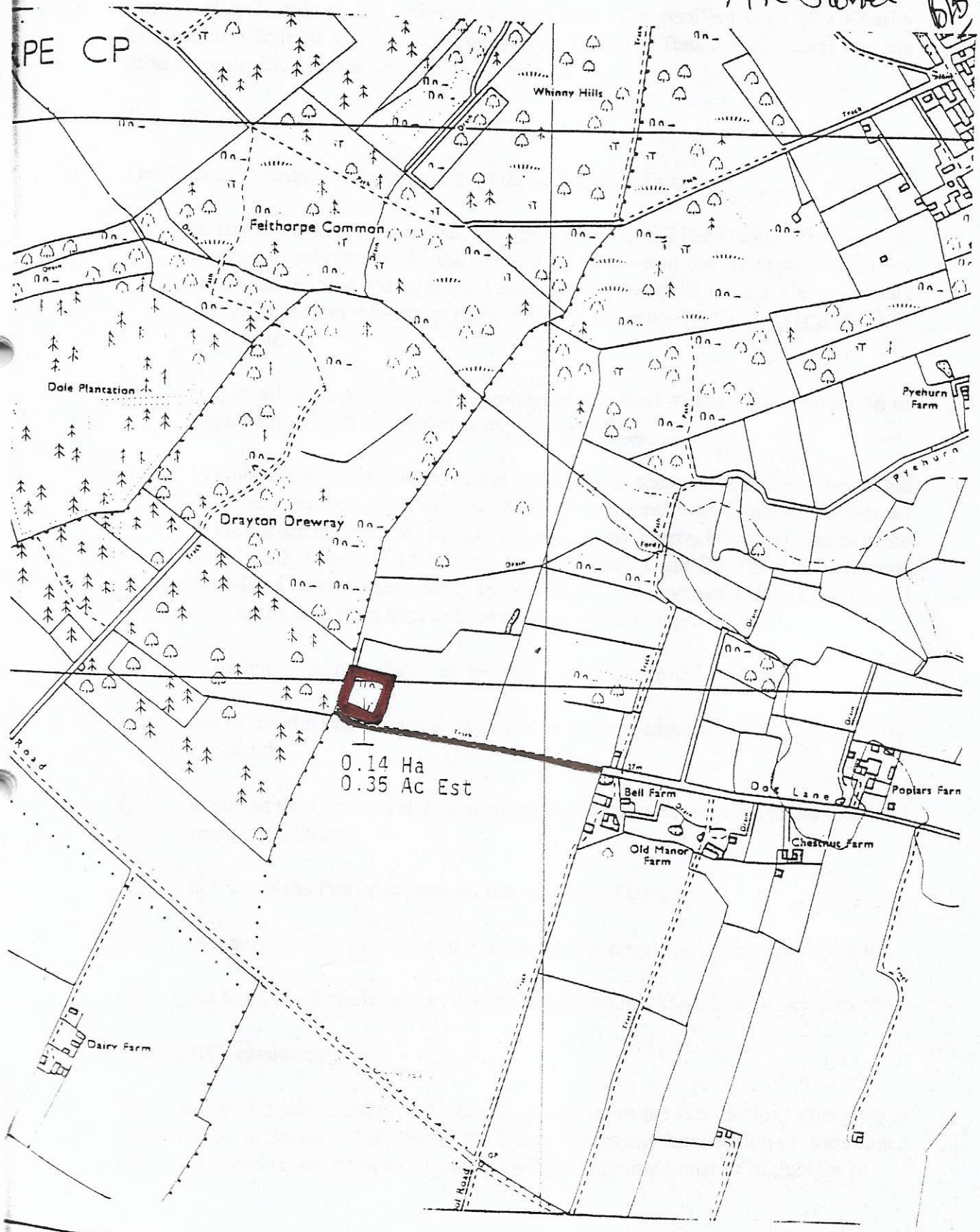
BSc (Hons) Arb. M.Arbor.A. MICFor.

PLAN 4

FRANCIS HORNOR
Chartered Surveyors

Rosetta - D. Dole
AR Barber

THE DOG LANE PIT



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HORSFORD PARISH COUNCIL WOODLAND PITS

Dog Lane Community Wood

Former village gravel pit awarded to the parishioners of Horsford under the enclosures act of 1802. The pit was in filled with inert waste in the 1980's / 90's and planted up mid 1990's and early 2000's by the Norwich Fringe Project with a mixture of oak, ash, field maple, rowan, sweet chestnut, cherry.

The woodland is accessible via an unsurfaced track which runs along its south boundary from the adjacent plantation west and heading east to Bell Farm and Dog Lane.

The track was once well used by off road vehicles but since the construction of the NNDR bollards at the entrance to the plantation and a locked field gate by Bell Farm Liveries has restricted the tracks use to cyclist, walkers and horse riders, although the path remains difficult underfoot dissuading those less able bodied or disabled.

The young woodland has been subject to some past thinning works carried out by Matt Davies, Norwich Fringe Project approximately 5 years ago.

Assisted by early management the young woodland has established well. Unfortunately the ash remain at risk from ash die back, *Hymenoscyphus fraxineus,* a chronic fungal disease of ash trees in Europe, characterised by leaf loss and crown dieback in infected trees.

Ash dieback is already causing significant damage to the UK's ash population, with knock on implications for woodland biodiversity and ecology, as well as impacting future hardwood industries.

The infection rate experienced in continental Europe is now being replicated in the UK. Young trees, including coppiced ash, tend to succumb quite quickly, although more mature trees may fight on for several years following infection, although after prolonged exposure other opportunistic pests or pathogen, such as Armillaria (honey fungus), may further weaken their state, eventually causing them to succumb.

Ash is one of our most useful and versatile native tree species, providing valuable habitat for a wide range of dependent species. A number of insects, other invertebrates, lichens and mosses depend wholly on ash for habitat. It has an ability to grow in a variety of soils and climatic conditions. The 'airy' nature of its foliage

allows light to penetrate to the woodland floor, encouraging ground plants and fauna, its decline will be a catastrophic loss to our woods, gardens and landscape on a par with the loss of our native Elms back in the early1960s, also the result of accidental import of infected plants and timber.

There is no control to reduce the infection rate or spread.

Due to the nature of infection the host trees can be at increased risk of branch drop or stem failure.

Current best practice recommends that mature trees within high target areas such as property, paths, roads and public spaces which exhibit more than 50% crown decline should be subject to frequent inspections to assess the risk that they may pose to persons or property in the event of failure.

Management of trees deemed too hazardous for retention also pose a risk to persons appointed to fell or carry out management works upon such trees. It is essential that prior to any works the appointed person undertake a pre work risk assessment to explore the safest method of works. This may involve the use of mechanical assistance to reduce the operative's exposure to the risk of falling branches or premature failure of the stem at the point of cutting thus keeping any chainsaw operations to an absolute minimum.

For further guidance please refer to https://ukfisa.com/Safety/Safety-Bulletins/felling-dead-ash

Tree risk management

People who manage ash trees near roads, railways, buildings and other publicly accessible land must consider the risks posed by infected ash. Trees or woodlands in these areas should be risk-assessed, monitored and managed to reduce the risk. By law, the owner of land where a tree stands is responsible for the health and safety of those who could be affected by that tree. If you are unsure about health and safety risks, then please contact us to discuss.

HORSFORD PARISH COUNCIL WOODLAND PITS

Dog Lane Community Wood

General woodland management

- Annually brush cut brambles around the kissing gate and along the edge of the fence line aside the track.

Proposed Native hedge

- Consider planting a mixed native hedge along the current post and wire fence line to establish a permanent boundary, removing the unsightly post and wire in favour of a mixed native hedge which would increase wildlife habitat and bio diversity.

- The existing fence line requires repair / replacement. Therefore rotten fencing should be removed to facilitate the new hedge planting in the next suitable dormant planting period, winter 2022.

- New hedging should consist of mixed bare root native stock, consisting of 5 plants per metre within a staggered planted row. Young plants shall require support and protection with canes and spiral guards at the time of planting and would benefit from weeding for the first couple of years to aid establishment. Preferable planting over winter months October to February

- A cut path leads visitors through the site aside which a bench or two have been placed.

Targeted Pruning

- Young trees would benefit from targeted pruning to address low crowns which could now be raised to around 3 - 4ms. Over competing branches which suppress their neighbours growth or form should also be addressed by way of selective pruning, making reduction points back to suitable sub lateral growth points or branch collars.

- Those trees which have developed co dominant stem leaders should have the weakest stem removed to allow development of the stronger vertical leader to reduce risk of future failure from included bark to bark unions. Internal crossing or rubbing branches should also be subject of targeted pruning. The

brash from this work can be left as fallen but broken down with a saw to naturally decay or stacked into wildlife habitat piles within the woodland.

- Several trees which have failed as a result of past storm or natural failures should be cut up, with timber recovered or stacked for habitat piles.

Woodland thinning.

Sudden changes in a young woodland stands density tends to result in the production of epicormic shoots, resulting in poor timber value and tree form, which ultimately impacts on the well being of the woodland. Therefore large scale thinning should not be considered for another 6 to 8 years within the plantation. However frequent, light, intermediate thinning, targeting weak, dead or diseased trees, may be required to ensure balanced growth through the remainder of the stand, whilst avoiding stress or overexposure of the crowns; these factors are crucial in avoiding unwanted epicormic growth.

Ash Tree Management

- Ash trees should be visually inspected during summer months to assess the severity of ash die back within the woodland stand or upon individual trees. It helps to mark those exhibiting advanced decline at that time to ensure they can be easily identified for management during winter months when not in leaf.

- Ash trees which exhibit advanced decline should be managed or removed where they pose a significant risk to persons or property. Where the risk is assessed as more tolerable it may be appropriate to retain them for the benefit of wildlife habitat either as standing deadwood or in a reduced monolith form.

- Continue to manage unwanted bracken, bramble and keep rampant climbers such as honeysuckle, ivy or old man’s beard from smothering young trees.

HORSFORD PARISH COUNCIL WOODLAND PITS

Dog Lane Community Wood

- Monitor the effects of young tree / woodland development upon mature boundary trees, especially oaks, some of which may have obtained great age. Competition from younger trees fighting for light, resulting in canopy closure as well as nutrient uptake, pose a great threat to ancient or noteworthy trees, increasing risk of decline and eventual death.

- Instances of canopy closure which threatens ancient or noteworthy trees can be managed via a management practice known as Halo thinning. This special method of management, selects out competing trees which are detrimental to the long live of a veteran, or noteworthy tree. Competing trees are selectively thinned or removed. It is highly important that such works is overseen by the consulting arborist to ensure the extent of works is suitable to the outcome so not to expose or stress veteran, or noteworthy trees.

- Risk assessment; instruct annual risk assessment to ensure your duty of care is met.

Japanese's knot weed (Fallopia japonica)

- There were signs of Japanese knot weed being present within a small area of the woodland close to the south west corner of the site. I believe Mat Davies has undertaken past herbicide treatment to try and eradicate its presence.

  Its presence is likely to have been imported into the site during the landfill process prior to the woodland replanting. Introduced into the UK from Japan in 1850, Japanese Knotweed is one of the most pernicious weeds in the UK. Reproduction occurs rapidly via tiny fragments of its rhizome and therefore should not be cut or strimmed as this can distribute viable plant tissue from which new growth can grow. Japanese Knotweed can grow up to 10cm a day and in just 10 weeks its stems can reach 3-4 metres in height.

- It is **not illegal** to have Japanese knotweed upon your grounds, but its presence can result in significant management cost and legal issues,

especially where it has potential to spread towards adjacent land, property or where future land development may take place.

Its presence can have a "detrimental effect of a persistent or continuing nature on the quality of life of those in the locality", legislation can be used to enforce its control within the Anti-social Behaviour, Crime and Policing Act 2014. This is especially relevant within residential or built up areas, resulting from claims or nuisance or direct property damage.

As part of the continued woodland management, and its proximity to the adjacent woodland plantation, it’s advisable to eradicate this invasive non-native plant.

- **Herbicide Treatment**

Herbicide treatment is an effective long-term eradication method, typically treatment programmes can take up to 4 years to complete and are suitable, providing there are no plans to disturb or develop the affected areas.

The best time to spray the leaves of Japanese Knotweed with herbicide is when the plant is actively growing, although more than one application may be required to control seasonal growth. Late summer or early autumn is the optimal period to apply herbicide when the plant is flowering and so the foliage conducts more nutrients and herbicide back into the rhizome under ground, reducing its ability to regenerate new growth the following spring.

Glyphosate, widely sold under the brand name Roundup**,** can be applied as a foliar spray (i.e., you spray it on the leaves) to stands of Japanese knotweed, using a pressurized sprayer, although great care and attention must be taken to avoid over spray or contamination of adjacent trees or plants.

An alternative method to spraying, and one which is a more control method of application, is to inject herbicide direct into each stem. Both methods must only be entrusted to a competent contractor who holds the mandatory certification PA 1 safe handling and PA6 safe application of pesticides and herbicides.

- In the event that any material containing Japanese Knot weed, either above or below ground, has to be disturbed or removed from site, you must ensure that only specialist Japanese knotweed contractors are employed and **must be registered waste carriers** to safely remove and dispose of any material.

PLAN 2

FRANCIS HORNOR

Chartered Surveyors

Rosetta D. Sole
AR Barber

GREENLANE PIT

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HORSFORD PARISH COUNCIL WOODLAND PITS

Former Landfill Pit, Green Lane wood

A disused clay pit that Matt Davies believes was filled in prior to the 1990's and has since been planted around 1993, with a mix of deciduous species, including Sweet chestnut, oak, rowan and naturally colonising birch.

Mats past management of the wood, has included selective thinning and crown lifting, as well as creating a simple path to aid access from Green Lane, although the gate designating the woodland stand from Green Lane had fallen into disrepair and since been removed, leaving the woodland compartment difficult to locate.

Targeted Pruning

- Young trees would benefit from targeted pruning to address low crowns which could now be raised to around 3 - 4ms.
- Over competing branches, which suppress their neighbours growth or form, should also be addressed by way of selective pruning making reduction points back to suitable sub lateral growth points or branch collars.
- Those trees which have developed co dominant stem leaders should have the weakest stem removed to allow development of the stronger vertical leader to reduce risk of future failure from included bark to bark unions.
- Internal crossing or rubbing branches should also be subject of targeted pruning.
- The brash from this work can be left as fallen, but broken down with a saw and left to naturally decay or stacked forming wildlife habitat piles.
- Trees which have failed as a result of past storm or natural failures should be cut up, with timber recovered or stacked for habitat piles.
- Stumps can be left where appropriate.
- Reinstate sign or notice board to be visible from Green Lane to designate community woodland access.

HORSFORD PARISH COUNCIL WOODLAND PITS

Former Landfill Pit, Green Lane wood

Woodland thinning.

Avoid over thinning, sudden changes in a young woodlands density tends to result in the production of epicormic shoots, resulting in poor timber value and tree form which ultimately impacts on the well being of the woodland. Large scale thinning should not be considered for another 6 to 8 years within this plantation. However in addition to remedial / formative pruning, targeted thinning to address or remove weak, dead or diseased trees may be required to ensure a balanced growth through the remainder of the stand, whilst avoiding stress or overexposure of the adjacent trees crowns; these factors are crucial in avoiding unwanted epicormic growth.

Generic Ash Tree Management

- Ash trees should be visually inspected during summer months to assess the severity of ash die back within the woodland stand or upon individual trees. It helps to mark those exhibiting advanced decline at that time to ensure they can be easily identified for management during winter months when not in leaf.
- Ash trees which exhibit advanced decline should be managed or removed where they pose a significant risk to persons or property. Where the risk is assessed as more tolerable it may be appropriate to retain them for the benefit of wildlife habitat, either as standing deadwood or in a reduced monolith form.
- Continue to manage unwanted bracken, bramble and keep rampant climbers such as honeysuckle, ivy or old man’s beard from smothering young trees.

Established Boundary Tree Management

- Monitor the effects of young tree / woodland development upon mature boundary trees, especially oaks, some of which may have obtained great age. Competition from younger trees fighting for light, resulting in canopy closure, as well as nutrient uptake, pose a great threat to ancient or noteworthy trees, increasing risk of decline and eventual death.

HORSFORD PARISH COUNCIL WOODLAND PITS

Former Landfill Pit, Green Lane wood

- Instances of canopy closure which threatens ancient or noteworthy trees can be managed via a management practice known as Halo thinning. This special method of management selects out competing trees which are detrimental to the long life of a veteran, or noteworthy tree. Competing trees are selectively thinned or removed. It is highly important that such works is overseen by the consulting arborist to ensure the extent of works is suitable to the outcome so not to expose or stress the veteran, or noteworthy tree.

- Health and Safety Risk assessment. Instruct annual risk assessment to ensure your duty of care is met.

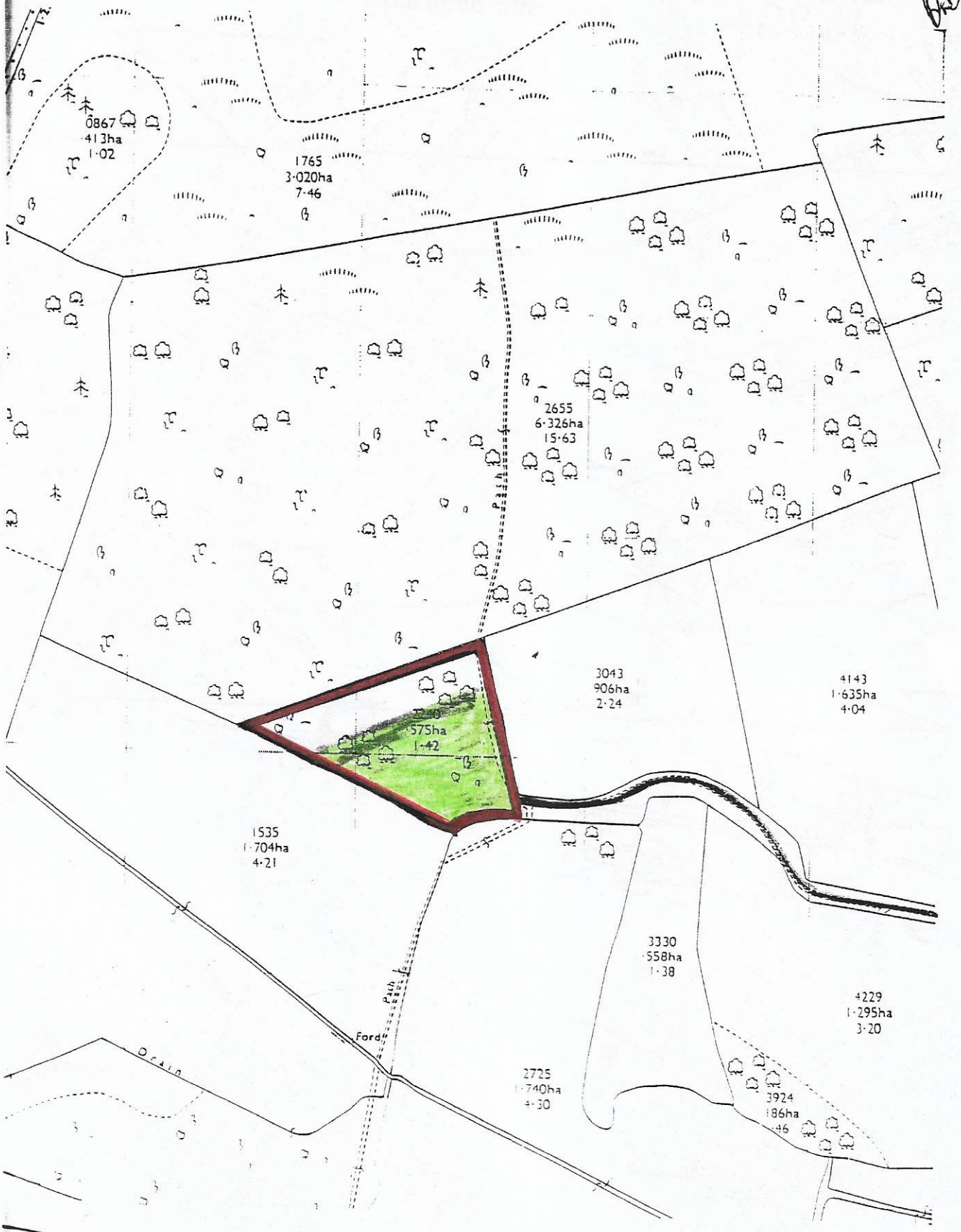
PLAN 3

FRANCIS HORNOR

Chartered Surveyors

Rosetta D. Sole
A R Barbe

PYE HURN LANE PIT



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HORSFORD PARISH COUNCIL WOODLAND PITS

Pyhurn Wood, Pyhurn Lane, Horsford

The mature boundary oaks retain significant dead wood.

The surrounding woodland outside of the ownership of Horsford Parish Council consists mostly of birch and pine mixed woodland.

The presence of compacted bare ground within Pyhurn Wood suggests frequent use by members of the public and from off road cycle activities and occasional vehicles access via the green lane track.

The central undulating pits consist of approximately 50 mature poplars, these range from 25 – 30 metres in height, with stem diameters ranging between 280 – 400mm.

Poplar Tree Management

Poplars have an estimated lifespan of 50 to 90 years.

It is important to manage poplars carefully in well used spaces due to their unpredictable and brittle nature.

Poplar's are extremely poor at defending themselves against wood decay, once fungi colonises its host, it can quickly result in stem hollowing or root decay, increasing physiological decline and or resulting in unpredictable failure of branches, stems or rootplate.

Another issue affecting poplars is the infestation by the poplar hornet moth (*Sesia apiformis*). The larva feeds on the live cambium under the bark in the region which produces new growth. Extensive infestations can over time result in a loss of tree vigour, as well as creating a mass of exit holes around the buttress when the larvae leave the tree to reproduce. Multiple wounding points may provide entry points for opportunistic fungal decay. Whilst infections may become significant over many years, this is not a sole reason to remove an otherwise healthy tree. Therefore each tree should be monitored and managed accordingly to its physiological and structural condition in relation to its surrounding target risk, i.e. road, path, bench etc.

It is important to remember that the risk from trees can never be completely removed, to do so would result in the unnecessary loss of trees and their benefits.

HORSFORD PARISH COUNCIL WOODLAND PITS

Pyhurn Wood, Pyhurn Lane, Horsford

The long term management of these particular trees would be to fell selected trees, prioritising those which display decline in physiological or structural condition. Any such loss should be mitigated by planting replacement trees.

Thinning selection should be repeated on biannual bases, allowing those trees with a limited life span or serious defects to be removed in favour of planting younger trees to increase the gene pool and woodland bio diversity, reducing noticeable age gap between young and old tree stock currently present and to ensure the woodland continues for future generations.

Canopy thinning as a result of selective felling will also increase light through to the woodland floor, benefiting flora and fauna.

Excessive deer browsing was evident, resulting in a loss of viable and naturally occurring seedlings and saplings which would otherwise have grown into individual trees, with a mix of understory trees and shrubs creating future tree stock.

It would not be possible to control deer numbers within such small compartments of land, therefore all new tree plantings shall require guarding to ensure establishment.

The site continues to be used by an off road cycling group who continue to develop their bike pump track.

What is a bike pump track? A pump track is a looped sequence of rollers and berms—swoopy, banked turns—for bike riders. It's designed to maximize momentum, so the rider can ride a course with minimal pedalling.

To ensure the success of any new planting it’s important to engage with such user groups to encourage them to look after and participate in its management.

Community involvement in the management of the site should be a key goal, to engage users of the wood to participate in its care and management.

Active involvement of all users should reduce risk of vandalism of existing trees and any new plantings.

Although the site exhibits signs of past and current excavation to facilitate the cycle track, as long as this type of work is minimal and continues to be undertaken by

hand and does not involve plant or machinery, the impact to trees is considered negligible but should be subject to monitoring to ensure such works does not become detrimental to tree health or stability.

Long term ground compaction can result in root and eventual tree decline although sandy soils tend to be less effected than clay soils but can be more susceptible to erosion and drought.

Whilst the trees are in leaf during summer months, their overall condition should be visually assessed for early signs of decline associated with current site activities resulting in ground compaction or pump track activities.

Unauthorised changes to ground levels, especially in proximity to mature trees, should be avoided as these can be detrimental to tree health or structural stability, increasing risk management costs as dangerous or declining trees will need to be managed accordingly.

Continued use of the woodland by the cycle group should not be dissuaded but strongly recommend any future excavations or significant changes to ground levels in proximity to mature trees should be passed by an Arboriculturist to ensure the trees are not compromised physiologically or structurally.

Areas under threat of excessive soil erosion or compaction can be improved by targeted under planting with bare root woodland shrubs or young trees during winter months’, such plantings can be used to create no go areas or guide users to use more appropriate routes helping to protect and restore compacted ground whilst enhancing the woodland understory.

Boundary Trees

The mature boundary Oaks retain significant deadwood throughout their crowns, although the risk of harm is deemed tolerable in view of the target frequency.

Our most recent Quantified Tree Risk Assessment had identified a requirement to undertake some remedial works within the woodlands to reduce instances of

deadwood from certain individual or groups of trees where targets posed an unacceptable risk.

Deadwood provides valuable wildlife habitat and therefore any remedial works to address its presence should continue to be carried out sympathetically to meet a balance between risk and its benefit to wildlife.

Honeysuckle and bracken provides understory cover for wildlife; however other emerging species appear to be heavily browsed by deer.

Birch is a short lived tree, with an expected 50 – 80 year life span. There are several silver birch present and these are one of the first natural site colonisers. Well adapted to sandy heath land soils and can quickly colonise naturally, however in this case their development is once again curtailed by browsing deer. It is important to try and assist their natural development on site, by way of protecting young seedlings, as several of the more mature trees exhibit signs of stem bleeds. The presence of stem bleeds indicates a decline of their physiological condition which in turn will lead to their eventual structural decline resulting in their removal.

Established Boundary Tree Management

- Monitor the effects of young tree / woodland development upon mature boundary trees, especially oaks, some of which may have obtained great age. Competition from younger trees fighting for light, resulting in canopy closure, as well as nutrient uptake, pose a great threat to ancient or noteworthy trees, increasing risk of decline and eventual death.

- Instances of canopy closure which threatens ancient or noteworthy trees can be managed via a management practice known as Halo thinning. This special method of management selects out competing trees which are detrimental to the long life of a veteran, or noteworthy tree. Competing trees are selectively thinned or removed. It is highly important that such works is overseen by the consulting arborist to ensure the extent of works is suitable to the outcome so not to expose or stress the veteran, or noteworthy tree.

- **Generic Ash Tree Management**

Ash trees should be visually inspected during summer months to assess the severity of ash die back within the woodland stand or upon individual trees. It helps to mark those exhibiting advanced decline at that time to ensure they can be easily identified for management during winter months when out of leaf.

Ash trees which exhibit advanced decline should be managed or removed where they pose a significant risk to persons or property. Where the risk is assessed as more tolerable it may be appropriate to retain some for the benefit of wildlife habitat, either as standing deadwood or in a reduced monolith form.

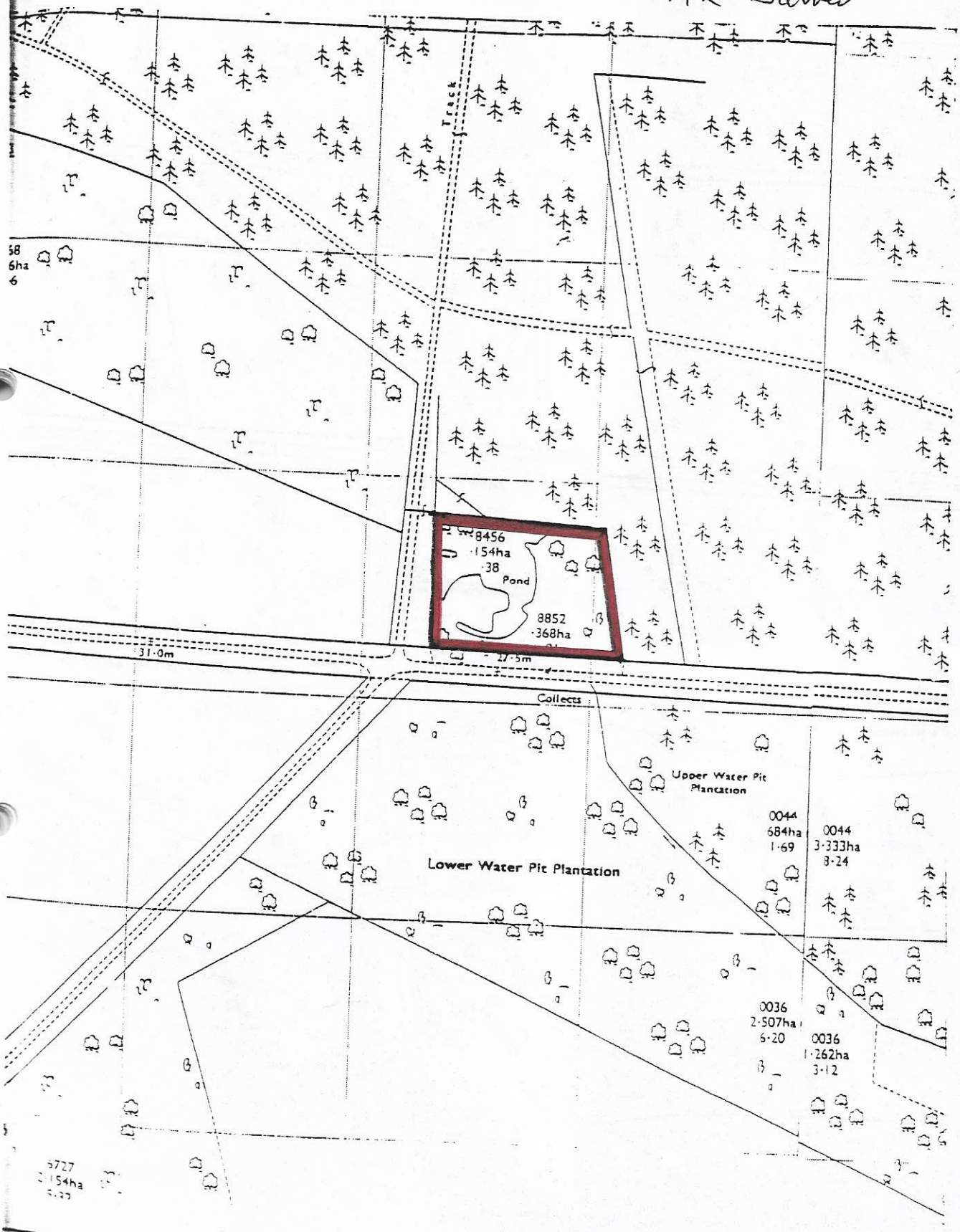
- Continue to manage unwanted bracken, bramble and keep rampant climbers such as honeysuckle, ivy or old man’s beard if present in check, so not to result in the smothering of young trees.
- Health and Safety Risk assessment. Instruct annual risk assessment to ensure your duty of care is maintained.

PLAN 1

FRANCIS HORNOR

Chartered Surveyors

Rosetta D. Sole
AR Barber
bb



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HORSFORD PARISH COUNCIL WOODLAND PITS

Horsford Green Lane Watering Pit

The Watering Pit, as it is known locally, has developed from historic clay excavation for the purpose of making local bricks. Once these pits fell into disuse they became flooded and eventually provided a suitable watering hole for cattle and also for local drovers who would take cattle between Norwich markets and various other locations.

Green Lane remains a vehicle right of way, designated as an unclassified county road. The road passes the Watering pit and therefore the pits are well known and visited.

Matt Davies from the Norwich Fringe Project has been associated with the management of this pit going back to the early 1990's. As a result Matt has continued to manage the pit and has undertaken several different management approaches, including coppicing Salix and other fallen trees.

An excellent site for ecology and bio diversity, a large area of open water which is mostly restricted around its outer peripheral edge by the adjacent Forestry Commission pine woods.

There was much evidence of Matt's past coppiced management, as several of the coppiced willow (Salix) stand within the marginal pit edges.

The tree species consist mostly of self sown birch, sedge, salix & holly.

I believe Matt oversaw the previous dredging of the pit resulting in its present environment.

Along the rear boundary of the pit, along the edge of the Forestry Commission compartment, some poplar, self sown pine and scrub oak were present.

Several trees remain in the water where they failed in past years. Some of these would benefit the site by being cleared and coppiced.

The green lane has been blighted by inconsiderate 4 x 4 vehicle use, making the passage along the right of way near impossible by foot or vehicle. Also vehicles trespass into adjacent Forestry Commission land which has resulted in erosion of an ancient woodland bank. In addition to this damage, there were signs of 4 x 4 vehicle access trying to push a route along the west boundary. Unless this point of access is

blocked Watering pit may also become blighted by unofficial off road access. Vehicle access should therefore be deterred into this environmentally sensitive site.

Generic Ash Tree Management

- Ash trees should be visually inspected during summer months to assess the severity of ash die back within the woodland stand or upon individual trees. It helps to mark those exhibiting advanced decline at that time to ensure they can be easily identified for management during winter months when out of leaf.
- Ash trees which exhibit advanced decline should be managed or removed where they pose a significant risk to persons or property. Where the risk is assessed as more tolerable it may be appropriate to retain them for the benefit of wildlife habitat, either as standing deadwood or in a reduced monolith form.
- Continue to manage unwanted bracken, bramble and keep rampant climbers such as honeysuckle, ivy or old man’s beard from smothering young trees.

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- Instances of canopy closure which threatens ancient or noteworthy trees can be managed via a management practice known as Halo thinning. This special method of management selects out competing trees which are detrimental to the long life of a veteran, or noteworthy tree. Competing trees are selectively thinned or removed. It is highly important that such works is overseen by the

consulting arborist to ensure the extent of works is suitable to the outcome so not to expose or stress the veteran, or noteworthy tree.

- Risk assessment. Instruct annual risk assessment to ensure your duty of care is met.

Appendix 2

Branch Pruning Guidance

Pruning Trees

Pruning is the most common tree maintenance procedure. Although coniferous forest trees grow quite well with only nature's pruning, deciduous trees require a higher level of care to maintain their safety and aesthetics and eventual timber value.

Pruning should be done with an understanding of how the tree responds to each cut. Improper pruning can cause damage that will last for the life of the tree, or worse shorten the tree's life.

Reasons for Pruning

Because each cut has the potential to change the growth of the tree, no branch should be removed without a reason. Common reasons for pruning are to remove dead branches, to remove crowded or rubbing limbs, and to eliminate hazards. Trees may also be pruned to increase light and air penetration to the inside of the tree’s crown or to the landscape below. In most cases, mature trees are pruned as a corrective or preventive measure.

Trees produce a dense crown of leaves to manufacture the sugar used as energy for growth and development. Removal of foliage through pruning can reduce growth and stored energy reserves. Heavy pruning can significantly increase stress on the tree.

Safety is also a major concern especially when trees grow close to roads, property or in relation to public safety, therefore pruning, crown reductions or complete tree removals may be required to remove or minimise risk.

Trees also complement other landscape plantings and lawns. Proper pruning, with an understanding of tree biology, can maintain good tree health and structure while enhancing the aesthetic and economic values of our landscapes.

When to Prune

Most routine pruning to remove weak, diseased or dead limbs can be accomplished at any time during the year with little effect on the tree. As a rule, growth is maximized and wound closure is fastest if pruning takes place before the spring growth flush. Some trees, such as walnuts, maples and

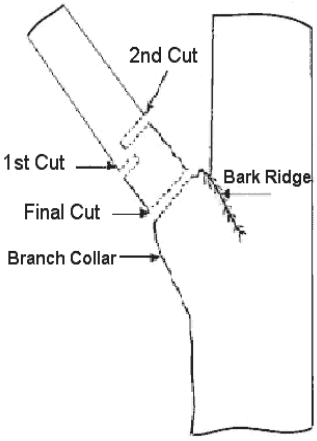
birches, tend to “bleed” if pruned early in the spring. It may be unsightly, but it is of little consequence to the tree.

Heavy pruning just after the spring leaf flush should be avoided. At that time, trees have just expended a great deal of energy to produce foliage and early shoot growth. Removal of a large percentage of foliage at that time can stress the tree.

HOW TO MAKE THE CUT?

Avoid making a single cut that risks tearing bark away from the branch or stem .

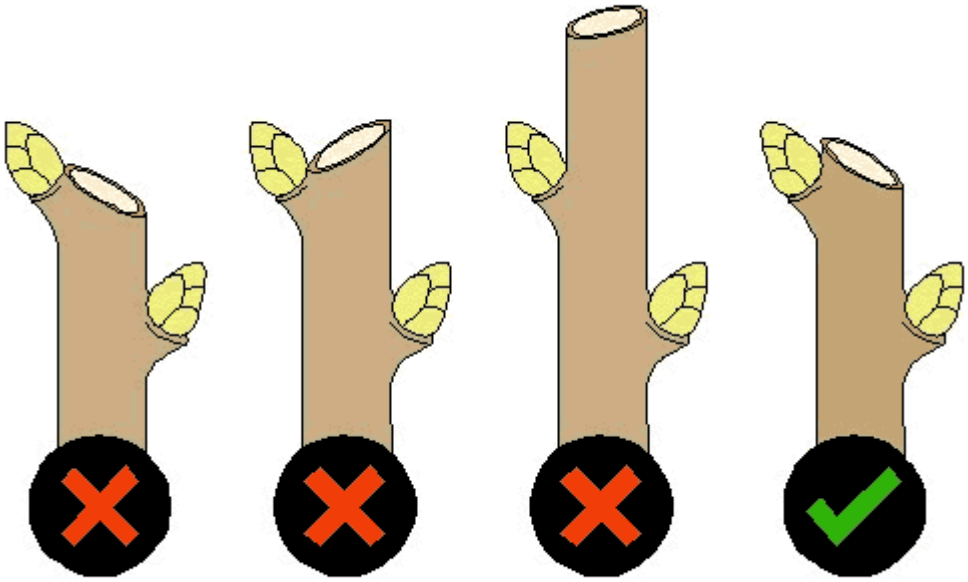
1. Make the first cut as undercut to help prevent branch splitting,
2. Make a top cut on outside of undercut.
3. Make the final by looking at branch bark ridge and make cut just above toward the fork.



NOTE: Knowing the location of **branch collars** is the **most important** pruning technique.

Photo indicates principle of branch removal

Correct pruning method indicating how to achieve a final pruning cut



Pruning Techniques

Specific types of pruning may be necessary to maintain a mature tree in a healthy, safe, and attractive condition.

Cleaning is the removal of dead, dying, diseased, crowded, weakly attached and low-vigour branches from the crown of a tree.

Crown thinning is the selective removal of branches to increase light penetration and air movement through the crown. Thinning opens the foliage of a tree, reduces weight on heavy limbs, and helps retain the tree's natural shape.

Brashing removes the lower branches from a tree in order to provide clearance for improved access, growth or increased timber value in the longer term. Or to reduce conflict with buildings, vehicles, pedestrians, and vistas.

Crown Reduction reduces the size of a tree. Reducing the height or spread of a tree is best accomplished by pruning back the leaders and branch terminals to lateral branches that are large enough to assume the terminal roles (at least one-third the diameter of the cut stem). Avoid topping at all costs as this practice is a very detrimental practice resulting in loss of shape, form and increased risk of die back with onset of decay. Subsequent multiple re growths which develop from poorly executed pruning wounds all compete for vertical dominance resulting in poorly attached regenerated growth which over time

increases tree management requirements as well as increasing the trees risk of tree related failure.

How Much Should Be Pruned?

The amount of live tissue that should be removed depends on the tree size, species and age, as well as the pruning objectives. Younger trees tolerate the removal of a higher percentage of living tissue better than mature trees do. An important principle to remember is that a tree can recover from several small pruning wounds faster than from one large wound.

A common mistake is to remove too much inner foliage and small branches. It is important to maintain an even distribution of foliage along large limbs and in the lower portion of the crown. Over thinning reduces the tree's sugar production capacity and can create tip-heavy limbs that are prone to failure.

Mature trees should require little routine pruning. A widely accepted rule of thumb is never to remove more than one-quarter of a tree's leaf-bearing crown. In a mature tree pruning even that much could have negative effects. Removing even a single, large-diameter limb can create a wound that the tree may not be able to close. The older and larger a tree becomes, the less energy it has in reserve to close wounds and defend against decay or insect attack. The pruning of large mature trees is usually limited to removal of dead or potentially hazardous limbs.

Wound Dressings

Wound dressings were once thought to accelerate wound closure, protect against insects and diseases and reduce decay. However, research has shown that dressings do not reduce decay or speed closure and rarely prevent insect or disease infestations. We strongly advise against the use of any wound dressings. If a dressing must be used for cosmetic purposes, then only a thin coating of a nontoxic material should be applied.

Example of Poor Pruning Methods **to be avoided**

Incorrect X

Included Stem and Branch Unions

The natural formation of included branch unions can increase the risk of tree failure as the tree matures. It is therefore best to prune out poor branch union development at a young age, targeting stems which exhibit the worst instances of such development, **see photo guidance below.** However it is not possible for all such trees to be improved by pruning and therefore complete tree removal may sometimes be the only course of action. Any such removal may allow a better specimen to be planted in its place. If in any doubt over which stem/branch or tree should be removed a suitably qualified Arborist should be consulted prior to tree removal or heavy pruning.

Included stem unions

Correct removal of included stems to allow retention of single leader

Correct √

Correct final pruning point leaving branch collar intact

Several years after correct pruning, the wound is nearly fully callused over protecting the wound.

Correct √

APPENDIX 3

COPPICING

Coppicing is an ancient form of woodland management that involves repetitive felling on the same stump, near to ground level, and allowing the shoots to regrow from that main stump. (Also known as the coppice stool)

A coppiced woodland will have trees with multiple stems growing out of the stool, which arise from dormant buds on the stool. These buds might also grow from the cambium layer of the cut stem, or root buds close to the stumps. Most shoots come from above ground, but in hazel they can emerge just below the surface.

Coppicing is a highly effective method of producing a great deal of fast growing, sustainable timber without the need to replant. The ability of native broad leaves to coppice has greatly influenced British woodland. Although trees will regrow from seed there are many hindrances like browsing and shading. As coppiced trees already have a fully developed root system, regrowth is rapid. It is important to note that species react differently to being coppiced. For example, common alder coppices poorly, and beech coppices better in the wetter western half of the UK. Ash coppices vigorously, but if the coppicing was done in mid or late winter the stool (stump) may not throw coppice shoots for 15 months. The stump appears moribund all through the first year after coppicing and then springs into life the following year

Most frequently coppiced species are oak, hazel, ash, willow, field maple and sweet chestnut.

Example of Coppiced Willow Stool

Acknowledgment Coppice . Co.Uk