Document Control Sheet	
Client:	Welwyn Services Ltd.
Project:	Vicars Grove Closed Landfill
Title:	Woodland Management Plan

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4. Nomenclature

ASNW	Ancient Semi-natural Woodland
CRoW	Countryside Rights of Way Act 2000
DEFRA	Department for Environment, Food and Rural Affairs
EN	English Nature
NBN	National Biodiversity Network
HBRC	Hertfordshire Biological Records Centre
HCC	Hertfordshire County Council
NE	Natural England
PPS9	Planning Policy Statement 9 (Biodiversity and Geological Conservation)
RPA	Root Protection Area
SAC	Special Areas of Conservation
SNCO	Statutory Nature Conservation Organisations
SSSI	Site of Special Scientific Interest
TPO	Tree Preservation Order
VGCL	Vicars Grove Closed Landfill
WACA	Wildlife and Countryside Act 1981

5. Introduction

5.1 Terms of Reference

QSP Ltd was engaged in March 2011 by Welwyn Services Ltd. to undertake preparation of Woodland Management Scheme for Vicars Grove Closed Landfill Site (hereafter referred to as 'the site'), near Hitchin, Hertfordshire. The requirement was raised by Hertfordshire County Council as part of a Planning Application. The Woodland Management Scheme also includes details for the management of the Buffer Zone (zone between woodland and former landfill zone undergoing restoration). The Woodland Management Scheme should be used in conjunction with the Tree and Shrub Planting Scheme (Reference Document: 541/PAPP/TSP1).

5.2 Objectives

The principal objectives are to:

- Provide a Woodland Management Scheme for the Site
    - Maintain or improve the natural ecological diversity of the woodlands
    - Maintain the genetic integrity of the native species where possible
    - Improve the aesthetics of the woodlands
    - Maintain glades and rides (or introduce where appropriate)
    - Take appropriate opportunities to produce utilisable wood
- Provide a Buffer Zone Management Scheme for the Site

5.3 Background Information

The woodland zone of the site is approximately 3.5 hectares in area. An area of semi-natural deciduous woodland bounds the site to the north, east and west of the site, and is shielded from the former landfill area by bunds and self-set trees. The bund acts as a physical barrier and protects the root systems of the older trees.

The woodland is primarily made up of Oak (*Quercus robur*) and Hornbeam (*Carpinus betulus*), but also comprises Field Maple, Hawthorn, Elder and Ash.

The woodland structure is principally high canopy with sparse shrub layer. Some of the more open areas have thickets of Stinging Nettles (*Urtica diocia*) on the western arm of the woodland. Two significant areas of the woodland show the presence of Common Bluebell (*Hyacinthoides non-scripta).*

5.4 Site Location

The site is located north of the Little Almshoe Lane, approximately 1km from the southern extremis of Hitchin, and 1km west of Little Almshoe village (Fig.1). The B656 is located 500m to the east of the site; Stevenage is approximately 2.7km to the east of the site. The site is located within an existing Green Belt, and surrounded by arable and pastoral farmland. The site is approximately 8 hectares in area and is made up of three key areas; semi-natural woodland (Fig.2), spoil heaps and ruderal/scrub (Fig. 3), and the site working area of hard-standing (Fig.4).

Vicar's Grove
Little Almshoe Lane
Nr. Hitchin
Hertfordshire
NGR: TL 1925NE

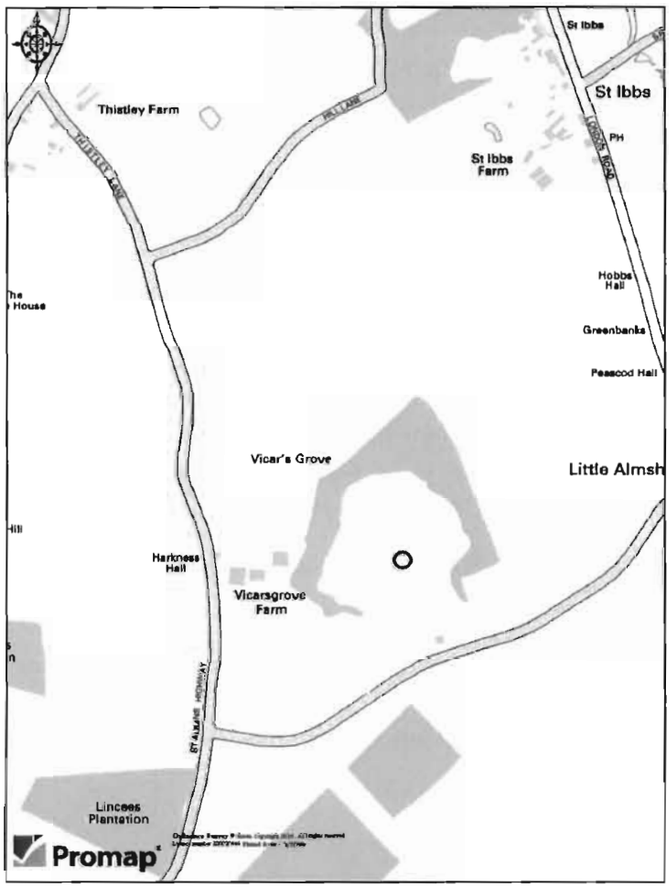

Figure 1: Location Map for Vicars grove Pit



Figure 2: Semi-natural Woodland at Vicars Grove Pit



Figure 3: Ruderal Area and Spoil Heaps



Figure 4: Working Area at Vicars Grove Pit

6. Woodland Management

6.1 Management History

The woodlands at the site are ancient semi-natural woodlands grown up around the bunds of the original mining/quarrying operations that began circa 1917. Other areas of the woodland are made up of secondary, self-seeded trees of varying ages. The woodland has not been managed for silvicultural purposes for many years. However, Hornbeam coppicing with oak standards is present in key areas of the woodland. No coppicing has taken place for many years.

6.2 Woodland Management Plan Introduction

The overall aim of woodland management at the site is to restore or maintain and improve the natural ecological diversity of the semi-natural woodlands. Ideally the Vicars Grove woodland will include the following features:

- Diverse ground layer
- Diverse scrub/field layer
- Sub-canopy of immature and low growing trees
- Healthy canopy layer
- Retained mature/older trees
- Deadwood present including aerial deadwood
- Brash and log piles
- Ivy and other climbing plants to be retained
- Glades created
- Renewed coppicing or pollarding



Figure 5: Ivy Growth at Vicars Grove

The woodland at Vicars Grove has been separated into 7 compartments (Appendix 3) based on canopy, shrub and field layer species diversity. Works to be carried out for each compartment are set out below.

6.3 Compartment Management

Each compartment should be checked thoroughly for squirrel and deer damaged trees and shrubs, as well as diseased or naturally fatigued trees. Where any seriously damaged, dying or dead trees are encountered they should be reviewed for the following outcomes:

- Leave *in situ*
- Fell and remove to nearest log pile
- Fell and remove from site
- Fell and chip for mulching and use on site
- Ring-bark and leave *in situ* as dead wood (after risk assessment)
- Consideration for tree and shrub replacement

Any trees or shrubs found in any compartment supporting ivy should be checked for general health, squirrel and deer damage, but otherwise left untouched to benefit the overall woodland ecosystem; trees supporting ivy should not be felled unless diseased or dangerous.

Where re-coppicing is unsuccessful, pollarding of a number of younger trees is recommended, which will also lessen potential predation by deer visiting the site.

A selection of new fallen branches should be left in situ, with the remaining being removed to the nearest log pile. Older falls should be left in place if considered safe.

Any invasive species discovered should be removed.

6.3.1 Compartment 1

This compartment requires selective thinning in combination with a limited planting (or transplanting) scheme to improve the diversity and structure of this area of woodland. Thinning should be limited so as not to reduce the screening facility of this area of woodland, but be sufficient to encourage the Shrub Layer. Further limited planting should also improve visual screening from Vicars Grove Farm. It is recommended that a selection of the trees set out below could be planted along the edge of the woodland (facing into the site) to both improve diversity and screening.

Wild Cherry x4/5 Field Maple x4/5 Blackthorn x4/5

There is a single maturing Sycamore tree at the far edge of this compartment that will require care and attention during the restoration phase to ensure protection of the TPA.

Saplings selected as part of the thinning works for this Compartment may be selected for transplant elsewhere on site.

6.3.2 Compartment 2.1 and 2.2

Compartment 2 is dominated by well-spaced Hornbeam and Oak with some elder, hawthorn and hazel. Some younger Hornbeam are beginning to develop a limited sub-canopy.

The Hawthorns, and shrubs growing along the farm boundary should be encouraged to further develop within this compartment.

The mature trees in this compartment are not suitable for coppicing. There should be no felling in this compartment, except to ensure a clear corridor to and from the Bat Roosts to be placed in this compartment.

Bluebells dominate the ground/shrub layer within this compartment, and great care should be taken throughout any works carried out in this compartment to ensure their security.

All works should take place prior to Bat Roost placement, except consequential corridor clearing.

6.3.3 Compartment 3

This compartment is made up of well-spaced Hornbeam and Oak, with some elder, hawthorn and hazel. There are also some younger trees and saplings. The mature trees here are not suitable for coppicing, however, to encourage an improved Shrub and field layer one or two of the mature trees may be felled or ring-barked.

There will be no requirement for any planting in this Compartment.

6.3.4 Compartment 4

This compartment has widely spaced Hornbeam and Oak, with some elder, hawthorn and hazel. There is some younger tree sub-canopy growth, but the ground layer is dominated by dense nettle growth. The nettles should be significantly thinned to allow other shrubs, herbs and wild flowers to succeed. Nettle removal generally takes a number of years to achieve, but some nettle 'banks' should be maintained for greater biodiversity within the woodland ecosystem. Any nettles left on site should be intensely managed to prevent further spreading.

Compartment 4 has a proto-glade which should be enlarged and managed to encourage field and shrub layer growth. Enlargement should include the felling of at least two mature Hornbeam trees and ring-barking one other within this compartment.

The fallen tree in this compartment should be made safe and retained as individual logs.

There will be no requirement for any planting in this Compartment.

6.3.5 Compartment 5

This larger compartment is dominated by well-spaced Oak and Hornbeam, with some mixed health, elderly coppiced Hornbeam.

Where elderly coppiced trees are encountered it is recommended that three to five be re-coppiced, leaving one or two "poles" on each stool. Coppicing elderly, unmanaged Hornbeams is sometimes unsuccessful, therefore this re-coppiced trees should be carefully monitored post-surgery. Some wood may be relocated to Log Pile 2, allowed to rest *in situ* or be removed off site. $2m^3$ of timber may be sold each quarter.

It is recommended that within this compartment two to four mature trees be ring-barked or felled to create an area of broken canopy is re-coppicing does not achieve suitable breaks in canopy. This will also encourage younger Hornbeam saplings to develop.

There is no requirement for any planting in this Compartment.

6.3.6 Compartment 6

This compartment is dominated by well-spaced Oak and Hornbeam, with some mixed health, elderly coppiced Hornbeam.

Where elderly coppiced trees are encountered it is recommended that three to five be re-coppiced, leaving one or two "poles" on each stool. Coppicing elderly, unmanaged Hornbeams is sometimes unsuccessful, therefore this re-coppiced trees should be carefully monitored post-surgery. Some wood may be relocated to Log Pile 2, allowed to rest *in situ* or be removed off site. $2m^3$ of timber may be sold each quarter.

It is recommended that within this compartment two mature trees be ring-barked or felled to create an area of broken canopy is re-coppicing does not achieve suitable breaks in canopy.

A single mature oak, located adjacent to the Buffer Zone, should be protected at all times from woodland management works at all time.

All works should take place prior to Bat Roost placement.

There is no requirement for any planting in this Compartment.

6.3.7 Compartments 7a

This more mature area of woodland is made up of oaks and Hornbeam. A single canopy dominates, with a prominent layer of bluebells at ground level. There is very little further layering within the woodland system except at the woodland edge, adjacent to arable field system.

The mature trees here are not suitable for coppicing. Re-coppicing may be attempted. However, re-coppicing mature coppiced trees is normally unsuccessful, due to lack of light, and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool.

If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the presence of deer.

Log Pile 3 should be constructed in this Compartment.

It is suggested that a simple Bumblebee habitat be created in compartments 7a.

There is no requirement for any planting in this Compartment.

6.3.8 Compartment 7b

This area of woodland is made up of oak, ash, and hawthorn and is very much younger than Compartment 7a. The layering within the woodland system is more complex with some shrub growth and secondary canopy on the older bund adjacent to the closed inert landfill, and near to the field boundary.

Selective thinning may be required on the bund to allow for healthier maturation of remaining trees, and improved layering.

It is recommended that the mature trees in this compartment be left as they are to provide mature canopy habitat.

There is no requirement for any planting in this Compartment.

6.3.9 Compartment 7c

This self-set area of growth should undergo selective thinning to allow for maturation and improved layering.

It is suggested that simple Bumblebee habitat be created in compartments 7c.

There is no requirement for any planting in this Compartment.

6.4 Veteran Trees

There are no trees on site which are considered Veteran Trees. Several mature/older trees on site will be retained for habitat/biodiversity purposes.

6.5 Nursery

Where appropriate and possible, suitable young trees/sapling of the secondary/self-seeded bund area could be removed to a nursery area on site in preparation for re-planting in the Buffer Zone.

6.6 Pests and Disease

6.6.1 General

Despite the neglect and lack of woodland management by previous owners the Vicars Grove woodland remains in relatively good health. There seems to be no obvious signs of fungal decay organisms attacking the tree species on site. However, the hedgerow bordering Little Almshoe Lane at the southern end of the site appears to have a number of dead elms (*Ulmus* sp.). It is recommended that any elms showing signs of Dutch Elm disease should be removed by professional Tree Surgeons.

6.6.2 Grey Squirrel

Grey Squirrels have occasionally been seen on site. However, the Vicars Grove woodlands are regularly walked by game shooters who also control the Grey Squirrel population. Control of invasive mammal species is to be encouraged. As well as causing tree damage, Grey Squirrels are likely to predate on bats and birds.

New planting will be monitored carefully for Grey Squirrel damage, and if damage is unsustainable appropriate control actions will be taken.

6.6.3 Deer

Evidence of the presence of deer has been noted on site though the deer species is not yet identified. Though Roe and Muntjac Deer have been seen locally, it is considered most likely to be Fallow Deer on site; Fig. 6).



Figure 6: Deer Photographed on Site

The presence of deer should not interfere with the felling/thinning of trees in the woodland. However, measures should be put in place to ensure the protection of introduced trees and shrubs within the Buffer Zone. Where glades are proposed, deer fences may be required to protect new growth. Introduced/new planted trees must be protected from deer attack by plastic sheathing as a minimum.

6.6.4 Rabbits

Rabbits are present in the woods and on the adjacent former landfill. Rabbits are presently controlled through shooting. It is unlikely that rabbits will interfere with the felling/thinning and other woodland management activities taking place within the Vicars Grove woodland itself, however, careful monitoring of the planting of the Buffer Zone should take place, and if necessary rabbit proof fencing (RPF) employed.

6.7 Dead Wood

Dead and dying wood is an important habitat and crucial part of the woodland ecosystem. Dead wood provides habitats and nest cavities for insects, and food sources for specialist feeders. Dead wood also provides organic material, nutrients, and moisture for the woodland ecosystem. Any dead standing or fallen trees (Fig. 7) should be made as safe as possible.

As the woodland will not be open to the general public it is considered ecological appropriate to allow any dead trees to remain standing on site to provide prey species and habitats for bats, woodpeckers and other bird species.



Figure 7: Fallen Tree (Lightning Strike)

It is advised that any standing dead trees be monitored regularly to ensure they do not become hazardous. It is recommended that advice be sought before felling any dead trees as they may be supporting bat roosts. A number of bird species are dependent on aerial dead wood such as treecreepers, nuthatches, tits and woodpeckers.

Three log piles are to be created on site. Log piles are considered suitable habitats for a range of insect species, and also for a number of native reptiles.

6.8 Bats

There are two key zones set aside in the forest with three specific trees labelled for the location of artificial bat roosts; full details in Bat Roost Plan (541/PAPP/BAT1). A number of other key trees have been marked as set aside as possible natural roosts – these trees will be left standing for many years.

Coppicing will be reintroduced to the Vicars Grove woodland. It is hoped that the coppicing process will allow new shoots to spring from the base. These shoots should support leaf-eating insects, and new shrub growth will flourish under the reduced canopy.

A number of log piles will be created within the Vicars Grove woodland, which may provide a good habitat for certain insect species.

No trees should be removed if it is suspected bats may be using it as a roost. Bat roosts are protected by law and it is an offence to interfere with, damage or remove them.

Tree planting within the woodlands will be minimal as thinning and felling is more suitable. However, the Tree and Shrub Planting Scheme includes tree, shrub and herb species suitable to encourage insects as prey species for bats.

6.9 Bumblebees

It is proposed that three simple bumblebee nesting boxes be placed on site. The nesting boxes will be based on those suggested by the Bumblebee Conservation Trust. The mix of shrubs, herbs and plants introduced within the Buffer Zone for encouraging insect species will also encourage bumblebee species (Foxglove will be introduced specifically for Bumblebees).

The bees and bumblebees will help the natural succession of the Buffer Zone and act as pollinators for new planting.

6.10 Bluebells

There are two key areas of significant Bluebell growth within the Vicars Grove woodland ecosystem. Fig. 7 shows one of the key Bluebell areas within the woodland prior to blooming (Compartment 2), whilst Fig. 8 shows Compartment 7 Bluebells in bloom. Works carried out in these two key compartments should ensure minimal damage to the above ground and root stock systems of the Bluebells. Works in these compartments should not take place during Spring and Early Summer.



Figure 8: Compartment 2 Bluebells



Figure 9: Compartment 7 Bluebells

6.11 Invasive Species

At present there have been no invasive or unwanted exotic vegetation species identified on site (Sycamore withstanding). Therefore, pesticides will not be used in the Vicars Grove woodland, nor will herbicides be used for weeding young unwanted trees and shrubs. Regular monitoring for invasive exotics will take place, and on discovery, Welwyn Services Ltd. will contact Hertfordshire County Council and the Forestry Commission for advice on the best programme of control.

6.12 Burning Forest Residues

The burning of forest residues is to be discouraged. Where appropriate, woody material should be left *in situ* as a dead wood resource and habitat, both for insects and reptiles.

Where appropriate a small area in Compartment 5 should be set aside to house a compost heap, made up of leaves and gathered brash and other forest residues. It is hoped this may prove beneficial to nesting Grass Snakes.

If large amounts of residual material are created, chipping should be considered or removed from site.

7. Buffer Zone

7.1 Introduction

The Buffer Zone has been introduced as a means to ensure the protection of the roots systems of the trees of the semi-natural woodland. The Buffer Zone follows the edge of the woodland as is approximately 5m in width. However, where larger, mature trees are found near to the edge of the woodlands the Buffer Zone will widen to ensure complete protection of the roots. The Root Protection Area (RPA) will be maintained throughout restoration operations.

Once the restoration has been satisfactorily completed, with soil systems in place, the Buffer Zone, where practical, will be utilised as a transitional zone between the woodland and the pasturelands.

7.2 Landscape Buffer Zone

7.2.1 Introduction

The Buffer Zone is designed to protect the roots of the trees making up the ancient semi-natural woodlands found at the Vicars grove site. However, a key and immediate issue with the restoration of this area of the site is the level of tree root entwinement with the surface inert waste (Fig. 10). Tree root entwinement is nearly entirely caused by the self-seeded, secondary trees that have grown up and over the original site bunds.



Figure 10: Root Systems Entwined with Inert Waste

7.2.2 Working

At no time during the Restoration Scheme should any mature trees of the semi-natural woodland be put at risk from root damage during works. However, it is proposed that during the restoration, young, secondary, self-seeded trees could be removed to facilitate removal of surface waste. Surface waste must be removed to allow for restoration and soil laying. It is proposed where bunds permit, to remove self-seeded trees and self-set scrub, and encourage wild grass banks to flourish (habitat and ecosystem resource). Further expansion of the woodlands along these areas would need to be sympathetically controlled. It is expected that vegetation interfaces be maintained along the Buffer Zone to encourage native reptile species.

If it is possible to translocate young native species saplings to the site Nursery for replanting at a later date this should take place prior to removal of any self-seeded trees.

Where appropriate self-seeded trees and self-set scrub should be felled using hand saws. Where practical it is suggested that any young trees felled which are unsuitable for logs should be utilised as part of the three Log Piles suggested for the woodland area.

Once removal of self-seeded trees has been successfully completed, removal of surface and sub-surface inert wastes can take place (Reference: Working and Restoration Scheme). This is an essential activity which facilitates subsequent soil setting, and planting.

Though the original bunds provide a significant physical barrier between the restoration area and the semi-natural woodlands, it is recommended that inert waste material should be removed to no more than 2m in depth throughout the Buffer Zone.

7.2.3 Conclusion

Full details of the Operations and Working Scheme for preparing the Buffer Zone area of the site are provided in the Working and Restoration Scheme documents.

7.3 Buffer Zone Planting

Detailed plans for the planting of Buffer Zone and banks (former bunds) are provided in the Tree and Shrub Planting Scheme. Planting will work with, and enhance, natural seral succession from the woodland. The planting scheme will create species diversity and food sources for a number insect species suitable for bat and wild bird predation (www.rspb.org.uk & www.bats.org.uk). The Buffer Zone will be maintained in such a manner that it will promote distinct vegetation interfaces suitable for reptile populations.

8. Monitoring

8.1 Introduction

Monitoring of the Woodland Management Scheme is essential to ensure the best chances of its successful implementation. The monitoring of the Scheme should ensure that the aims of the scheme are being achieved, but also highlight possible revisions.

8.2 Annual Review

It is suggested that a yearly review of the Woodland Management Scheme be carried out. Findings of the Annual Review should be documented and, where appropriate, action taken to remedy any shortfalls.

Annual Review should include:

- Full review, compartment by compartment
- Log all works carried out
- Fixed point photography
- Written account of changes in woodland structure
- Written account of levels of regeneration
- Written account of failures or less successful changes

8.3 Five Year Review

It is suggested that a comprehensive review of the Woodland Management Scheme be carried out after five years. The five year review should encompass a full evaluation of the success of the planting carried out across the site.

8.4 Replanting and Remediation

Where management fails, for any reason, a review should be carried out to identify the reasons for the management and restoration failure, such as;

- Disease
- Inappropriate species choice for Pedology and Geology
- Predation
- Damage by Deer and Grey Squirrels
- Vandalism
- Accidental Harm

When the failure cause has been established, replanting should take place as soon as appropriate (for season and species) taking into account previous planting failures.

9. Conclusions and Recommendations

10.1 Introduction

The Woodland Management Scheme has been developed as part of the conditions set out by Hertfordshire County Council to protect the existing woodland and ecology on site.

10.2 Recommendations

QSP Ltd. recommends that support and guidance be obtained from a professional Tree Surgeon when carrying out the felling of the larger trees on site.

Due to the relatively thin arc of trees that comprise the Vicars Grove woodland, it is recommended that full rides, which should normally be one and half times the width of mean tree height, would be too large and detrimental for the woodland ecosystem.

Regular monitoring of the Woodland Management Plan should be undertaken to ensure the aims are met, as set out in Section 7 of this document.

10.3 Conclusion

With careful management it is considered that the Vicars Grove woodland can be protected, and significantly improved as a woodland system, increase biodiversity and improve visual amenity.

10. References

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Sitecheck Report SCD_31497410_1_1 (Landmark/2010)

Tree Seeding - Best Practice Guidance Note 10 (2006); Forest Research. Farnham, Surrey.

Weed Control - Best Practice Guidance Note 11 (2006); Forest Research. Farnham, Surrey.

11. Appendix 1: Site Risk Assessment

Off-site/Desk-Top Risk Assessment			
Project name & reference	Vicars Grove 541	Site Location	Little Almshoe Lane, Nr Hitchin
Site description	Closed Inert Landfill sites		
Date	12/07/10		
Client H&S contact	Paul Smith	07973 827 309	
	Email: paulsmith.welwynservices@live.co.uk		
Local Information:			
Nearest A&E hospital location	Hertford A and E		
Environment: Yes/No Details			
Steep slopes	yes	Spoil heaps	
Water features	no		
Uneven or soft ground	yes	Poor capping	
Underground/confined spaces	no		
Liable to fire/flood, etc.	no		
Poor lighting	no		
Noise/vibration	no		
Hot/cold	no		
Urban/urban fringe area	no		
Hazardous Substances Yes/No Details			
Asbestos	no		
Hazardous waste	no		
Chemicals	no		
Dust	poss	On dry and windy days	
Biological agents	no		
Radiation	no		
Electricity	no		
Other (please specify)			
Site Use: Yes/No Details			
Site manned?	yes	During operations	
Public access/use	no		
History of antisocial/criminal use	no		
Construction work	yes	restoration	
Vehicles/Fork-lift present	yes	Lifting vehicles and transport vehicles	
Fixed Plant present	no		
Mobile plant present	yes	Crushers and screeners	
Survey Requirements and Site Access Yes/No Details			
Entry into roofs	no		
Entry into derelict/disused buildings	no		
Entry into underground structures	no		
Entry onto ladders/ scaffold	no		
Accessible parking	no		
Other hazards			
Landfill Gas	no		
Adders	no	None recorded on site or in close vicinity	
This Assessment carried out by:		Russell Carter	

12. Appendix 2: Compartment Appraisal Summary

			Compartment Appraisal
1.	End of Western Arc	2.1	Adjacent to Vicars Grove Farm
	Species: Self-set Hawthorn, Field Maple, Elder, other **Age:** youthful, under 10 years **Structure:** Poor layering **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Minimal selective thinning with removal of waste to Log Pile 1. Thinning here should be carried out sparingly as this area screen views to Vicars Grove Farm. Selective thinning will encourage shrub layer. Some planting to maintain the screening. Single maturing Sycamore (*Acer pseudoplatanus*) requires extension of the Buffer Zone to support TPA. Allow any fallen logs and branches to remain *in situ*. If suitable saplings may be utilised for replanting transplant to nursery. Control unwanted tree species.		**Species:** Well-spaced Hornbeam and Oak dominate, some elder, hawthorn, hazel, other **Age:** 40 years plus – very few younger trees and saplings **Structure:** Canopy with single low shrub layer including Common Bluebells **Works:** Care when working in this area to protect wild flower species. Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Selective thinning to encourage Shrub Layer (prior to bat roost placement). Allow shrubs and hawthorns to continue to grow along farm boundary. Mature trees here are not suitable for coppicing.
		2.2	Check health of trees set aside for Bat Roosts
3.	Centre Arm	4.	Nettled Zone
	Species: Well-spaced Hornbeam and Oak dominate, some elder, hawthorn, hazel, other **Age:** 40 years plus – a few younger trees and saplings **Structure:** Canopy with single low mixed shrub layer some encroachment by shrub trees **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Mature trees here are not suitable for coppicing. Selective thinning to encourage the Shrub Layer Allow any older fallen logs and branches to remain *in situ*. Younger falls to be removed to Log Pile 1. Allow roof sheeting to remain – reptile refugia. Remove any dumped/waste materials. Control unwanted tree species. Build Log Pile 1.		**Species:** Well-spaced Hornbeam and Oak dominate, some elder, hawthorn, hazel, other **Age:** 40 years plus – a few younger trees and saplings **Structure:** Canopy with heavy Stinging Nettle layer (Fig. 11) some encroachment by shrub trees **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Mature trees here are not suitable for coppicing. Allow any older fallen logs and branches to remain *in situ*. Younger falls to be removed to Log Pile 1. Nettles should be significantly thinned to allow other shrubs, herbs, wildflowers to succeed. Nettle removal will take a number of seasons to achieve. Some 'nettle banks' should remain (for ecological diversity) but be carefully controlled to ensure containment. This area of low tree density should be selectively thinned to present a wider woodland glade. Tidy fallen tree to make safe and retain as individual logs



Figure 11: Heavily Nettled Area of Compartment 4

5.	Oak with Hornbeam Coppices	6.	Bat Roost Zone 2
	Species: Well-spaced Hornbeam and Oak dominate, with some mixed elderly coppiced Hornbeams. **Age:** 40 years+ **Structure:** Canopy with single low mixed shrub layer some encroachment by shrub trees **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Allow any older fallen logs and branches to remain *in situ*. Younger falls to be removed to Log Pile 2. Create areas of broken canopy by selective removal of older trees. Re-coppicing mature coppiced trees is normally unsuccessful due to lack of light and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool. If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the presence of deer. Harvest every two/three years. Build Log Pile 2.		**Species:** Well-spaced Hornbeam and Oak dominate, with some mixed elderly coppiced Hornbeams. **Age:** 40 years+ **Structure:** Canopy with single low mixed shrub layer some encroachment by shrub trees **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Allow any older fallen logs and branches to remain *in situ*. Younger falls to be removed to Log Pile 2. Single Oak at woodland edge facing into site is in good condition. Due to its maturity and height (9m) and its close proximity to the Restoration Zone, this tree requires a widening of the Buffer Zone to compensate for its wider TPA. Create an area of broken canopy by selective removal of older trees. Re-coppicing mature coppiced trees is normally unsuccessful due to lack of light and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool. If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the presence of deer. Harvest every two/three years.



Figure 12: Elderly Coppicing in Compartment 5



Figure 13: Unmanaged Coppicing in Compartment 6.1

7a.	End of Eastern Arc	7b.	End of Eastern Arc
	Species: Oak and Hornbeam **Age:** Mature oaks and Hornbeam **Structure:** Single canopy with shrub layer including Common Bluebells **Works:** Care when working in this area to protect wild flower species. Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Mature trees here are not suitable for coppicing. Re-coppicing mature coppiced trees is normally unsuccessful due to lack of light and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool. If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the presence of deer. Harvest every two/three years. Maintain areas of shrub growth at woodland edge, to ensure diversity and habitats. Build Log Pile 3.		**Species:** Oak, Ash, Hawthorn, other **Age:** Mature Oaks and Hornbeam, elder, hawthorn, other **Structure:** More complex layering based on single canopy and shrub layer **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Selective thinning of older trees to create an area of broken canopy. Selective thinning on the bund slope of self-set trees to allow for maturation and layering. Residual material to Log Pile 3.



7c.	End of Eastern Arc		
	Species: Hawthorn, other **Age: Youthful, u**nder 10 years **Structure:** Self-seeded scrub, poor layering **Works:** Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees. Thinning of self-set trees to allow for maturation and layering; remove materials to Log Pile 3. Allow any older fallen logs and branches to remain *in situ*. Younger falls to be removed to Log Pile 3. Removal of any waste material by hand. Some clean slate/stone materials may be left as insect habitats. Larger pieces of slate may utilised to prepare bumblebee nests elsewhere on site.		
	Any trees supporting ivy (*Hedera helix*) should be checked for general health, and squirrel and deer damage, but otherwise left untouched as they of benefit to woodland ecosystem. Trees supporting ivy should not be felled unless diseased or dangerous.		

In any calendar quarter a landowner is allowed to fell up to 5m^3 of timber on their property without a licence, so long as no more than 2 m^3 are sold. These are the main exemptions:

1. Most tree surgery, pruning and pollarding.

2. Felling included in an approved plan under a Forestry Commission grant scheme (e.g. Woodland Grant Scheme).

3. Felling fruit trees, or trees growing in a garden, orchard, churchyard or other designated public open space.

4. Felling trees which, when measured at a height of 1.3m from the ground:-

a. Have a diameter of 8cm or less; or

b. If thinnings (trees removed from amongst other trees to allow their growth) have a diameter of 10cm or less; or

c. If coppice or under-wood (trees as a part of a layer below the main forest canopy) have a diameter of 15cm or less.

5. Felling trees immediately required to implement a planning permission.

6. Felling trees for work carried out by some service providers (e.g. electricity, water) and which is essential to carry out those services.

7. Felling necessary to prevent the spread of a disease and done in accordance with a notice served by the Forestry Authority.

8. Felling in compliance with an Act of Parliament

13. Appendix 3: Detailed Woodland Compartment Plan

4. Nettled Zone

Species: Well-spaced Hornbeam and Oak dominate, some elder, hawthorn, hazel, other

Age: 40 years plus - a few younger trees and saplings

Structure: Canopy with heavy Stinging Nettle layer (Fig. 11) some encroachment by shrub trees

Works: Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Mature trees here are not suitable for coppicing.

Allow any older fallen logs and branches to remain in situ. Younger falls to be removed to Log Pile 1.

Nettles should be significantly thinned to allow other shrubs, herbs, wildflowers to succeed. Nettle removal will take a number of seasons to achieve. Some 'nettle banks' should remain (for ecological diversity) but be carefully controlled to ensure containment.

This area of low tree density should be selectively thinned to present a wider woodland glade.

Tidy fallen tree to make safe and retain as individual logs

5. Oak with Hornbeam Coppices

Species: Well-spaced Hornbeam and Oak dominate, with some mixed elderly coppiced Hornbeams.

Age: 40 years+

Structure: Canopy with single low mixed shrub layer some encroachment by shrub trees

Works: Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Allow any older fallen logs and branches to remain in situ. Younger falls to be removed to Log Pile 2.

Create areas of broken canopy by selective removal of older trees.

Re-coppicing mature coppiced trees is normally unsuccessful due to lack of light and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool.

If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the ——of deer.

Harvest every two/three years.

Build Log Pile 2.

6. Bat Roost Zone 2

Species: Well-spaced Hornbeam and Oak dominate, with some mixed elderly coppiced Hornbeams.

Age: 40 years+

Structure: Canopy with single low mixed shrub layer some encroachment by shrub trees

Works: Check for Squirrel/Dear damaged trees. Remove any unhealthy or damaged trees.

Allow any older fallen logs and branches to remain in situ. Younger falls to be removed to Log Pile 2.

Single Oak at woodland edge facing into site is in good condition. Due to its maturity and height (9m) and its close proximity to the Restoration Zone, this tree requires a widening of the Buffer Zone to compensate for its wider TPA.

Create an area of broken canopy by selective removal of older trees.

Re-coppicing mature coppiced trees is normally unsuccessful due to lack of light and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool.

If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the presence of deer.

Harvest every two/three years.

3. Centre Arm

Species: Well-spaced Hornbeam and Oak dominate, some elder, hawthorn, hazel, other

Age: 40 years plus - a few younger trees and saplings

Structure: Canopy with single low mixed shrub layer some encroachment by shrub trees

Works: Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Mature trees here are not suitable for coppicing.

Allow any older fallen logs and branches to remain in situ. Younger falls to be removed to Log Pile 1.

Allow roof sheeting to remain - reptile refugia.

Remove any dumped/waste materials.

Control unwanted tree species.

Build Log Pile 1.

2. Adjacent to Vicars Grove Farm

Species: Well-spaced Hornbeam and Oak dominate, some elder, hawthorn, hazel, other

Age: 40 years plus - very few younger trees and saplings

Structure: Canopy with single low shrub layer including Common Bluebells

Works: Care when working in this area to protect wild flower species.

Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Allow shrubs and hawthorns to continue to grow along farm boundary.

Mature trees here are not suitable for coppicing

2.2 Check health of trees set aside for Bat Roosts

End of Eastern Arc

Species: Oak and Hornbeam

Age: Mature oaks and Hornbeam

Structure: Single canopy with shrub layer including Common Bluebells

Works: Care when working in this area to protect wild flower species.

Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Mature trees here are not suitable for coppicing.

Re-coppicing mature coppiced trees is normally unsuccessful due to lack of light and predation. However, it is suggested that to create areas of broken canopy older coppices could be re-coppiced, but leaving one "pole" on each stool.

If re-coppicing is not successful, it is recommended that younger Hornbeams be pollarded instead of coppiced due to the presence of deer.

Harvest every two/three years.

Maintain areas of shrub growth at woodland edge, to ensure diversity and habitats.

Build Log Pile 3.

1. End of Western Arc

Species: Self-set Hawthorn, Field Maple, Elder, other

Age: Youthful, under 10 years

Structure: Poor layering

Works: Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Minimal selective thinning with removal of waste to Log Pile 1. Thinning here should be carried out sparingly as this area screen views to Vicars Grove Farm. Selective thinning will encourage shrub layer.

Single maturing Sycamore (*Acer pseudoplatanus*) requires extension of the Buffer Zone to support TPA.

Allow any fallen logs and branches to remain in situ.

If suitable saplings may be utilised for replanting transplant to nursery.

Control unwanted tree species.

7b. End of Eastern Arc

Species: Oak, Ash, Hawthorn, other

Age: Mature Oaks and Hornbeam, elder, hawthorn, other

Structure: More complex layering based on single canopy and shrub layer

Works: Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Selective thinning of older trees to create an area of broken canopy.

Selective thinning on the bund slope of self-set trees to allow for maturation and layering.

Residual material to Log Pile 3.

7c. End of Eastern Arc

Species: Hawthorn, other

Age: Youthful, under 10 years

Structure: self-seeded scrub, poor layering

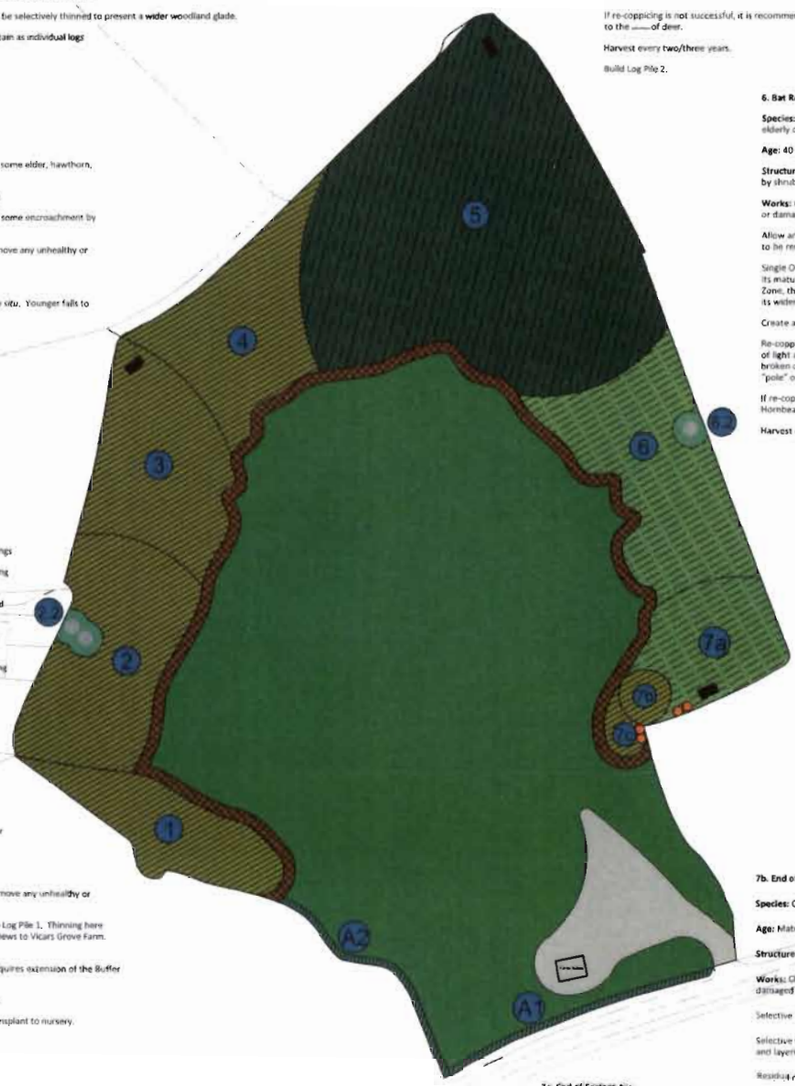
Works: Check for Squirrel/Deer damaged trees. Remove any unhealthy or damaged trees.

Thinning of self-set growth to allow for maturation and layering, remove materials to Log Pile 3.

Allow any older fallen logs and branches to remain in situ. Younger falls to be removed to Log Pile 3.

Removal of any waste material by hand. Some clean slate/stone material may be left as insect habitats. Larger pieces of slate may be utilised to construct bumblebee nest/refuge on site.

NB: Any trees supporting Ivy (*Hedera helix*) should be checked for general health, and squirrel and deer damage, but otherwise left untouched as they are of benefit to woodland ecosystem. Trees supporting Ivy should not be felled unless diseased or dangerous.



KEY:

- Buffer Zone
- Coppicing/Pollarding
- Coppicing/Pollarding and Tree Thinning
- Tree Planting Locations
- Tree Thinning
- Bat Box Location
- Bumblebee Nesting Boxes
- Compartment Label
- Log Pile Location
- Hardstanding
- Pasture Land
- Acceptable Woodland

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VICARS GROVE INERT LANDFILL SITE

WOODLAND MANAGEMENT PLAN

Scale:	Drawn by:	Date:
NTS	BLM	June '11

Drawing No: 541/PAPP/FWM1