LUC

www.landuse.co.uk

Spitalbrook

Environmental Strategy

Prepared by LUC for the Lee Valley Regional Park Authority

November 2012

www.landuse.co.uk

Document Control

Version	Date	Version Details	Prepared by	Checked by	Approved by Principal
1.0	31.10.12	First Issue	Ben Shakespeare	Richard Hannay	Richard Hannay
2.0	12.11.12	Second Issue	Ben Shakespeare	Richard Hannay	Richard Hannay

Planning & EIA
Design
Landscape Planning
Landscape Management
Ecology
Mapping & Visualisation

LUC LONDON
43 Chalton Street
London NW1 1JD
T 020 7383 5784
F 020 7383 4798
london@landuse.co.uk

Offices also in
Bristol
Glasgow
Edinburgh

FS 566056
EMS 566057

Land Use Consultants Ltd
Registered in England
Registered number: 2549296
Registered Office:
43 Chalton Street
London NW1 1JD

Printed on 100% recycled paper

www.landuse.co.uk

Spitalbrook

Environmental Strategy

Prepared by LUC for the Lee Valley Regional Park Authority

November 2012

Aerial photo of Lafarge works, 2010 approx

Contents

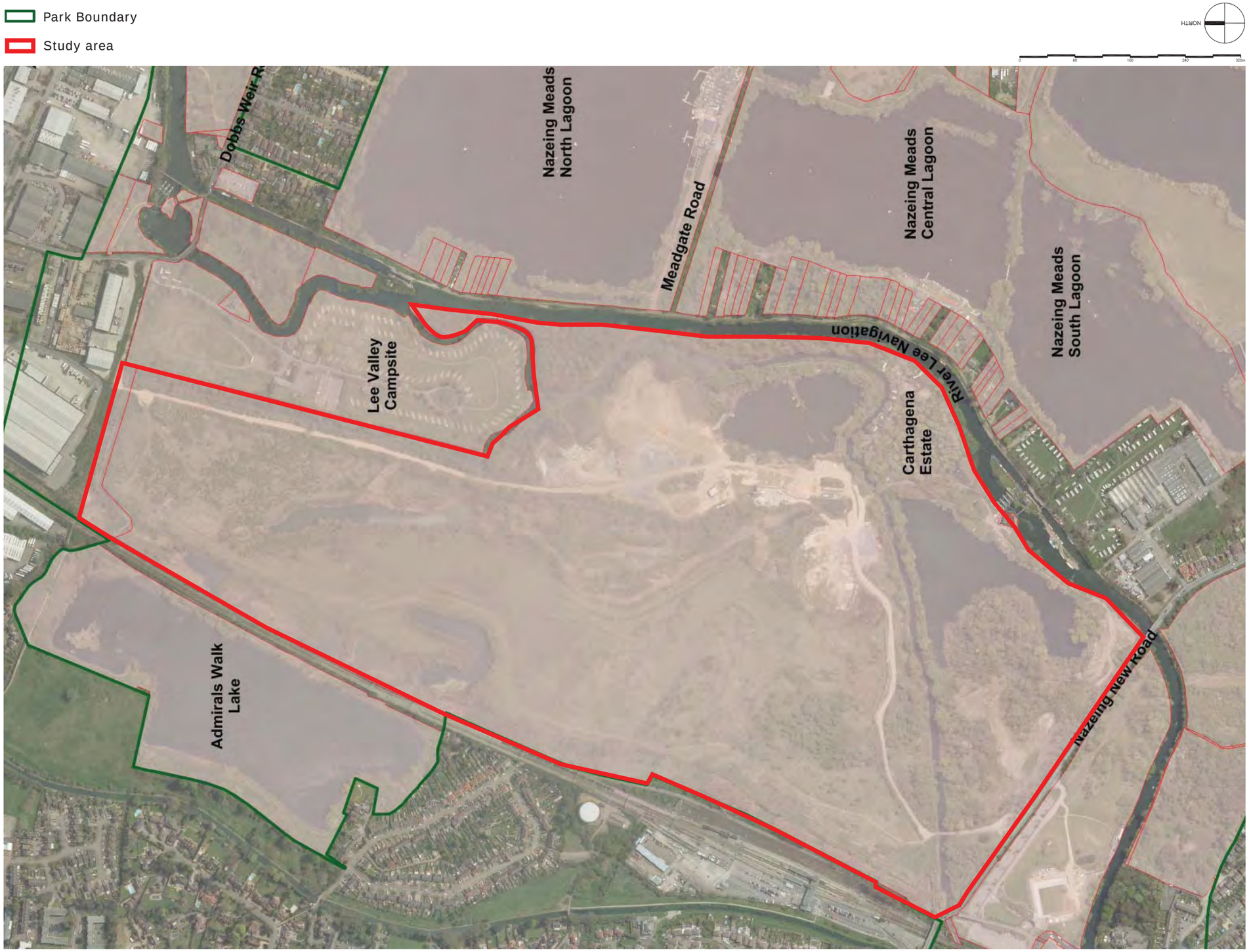


Figure 1: Study Area

Background

The LVRPA has commissioned LUC to develop proposals for sites in the north of the Park where landscape is under stress. This Environmental Strategy has been developed to Stage C of the RIBA and Landscape Institutes' work stages. The principal objective of the strategy is to identify opportunities that exist for these areas which can be realized with limited capital investment and can be maintained at minimal cost. At Spitalbrook there is an added incentive to identify opportunities which can be delivered as part of agreed restoration following minerals extraction and subsequent use by leaseholders Lafarge.
This study was undertaken in July and August 2012. Its purpose is two-fold - a rapid assessment of the opportunities for the wider area together with a high level strategy, and more detailed proposals for the area currently leased by Lafarge.

This is an interim report which focuses on the second of these purposes. The final report will include more detailed proposals for the wider area - in particular areas to the west of the Lafarge leasehold area. The interim report will be used to accompany the restoration proposals so that they can be submitted and approved by Hertfordshire CC as the minerals authority.

The study area is shown in **Figure 1**.

Context and landscape appraisal

The site lies in the northern zone of the Lee Valley and in Landscape Character Area 2 of the LVRPA's landscape character assessment. It is characterized by extensive mineral excavation and restoration involving the creation of water filled pits. These provide a regional, and in some cases, a national resource for angling.

The Lee Navigation, and Lee and Lynch rivers provide further braided watercourses. These watercourses and the railway to the west have resulted in a pattern of sparse and severed access that is typical for much of the area. Combined with significant tree belts this serves to produce an inward looking landscape that is somewhat physically and visually isolated from even its immediate context.

Figure 2: Aerial photograph

River Lynch and SW corner of site with scrub / grassland mosaic

Footpath connection to railway crossing immediately north of site

North entrance bridge and haul road beyond

South haul r oad - Macadam surface and ready-made shared cycle / pedestrian facility

Unusually extensive ruderal communities on old hard standing

Now dry and colonised silt ponds

The Site

This relative isolation has been exacerbated by access to the great majority of the site being prohibited during mineral extraction and subsequent use by the leaseholder Lafarge. Access is limited to parts of the fishing lake in the east of the site.

There are two vehicular access points to the site both of which are bridges which remain securely locked. These bridges are at the north and south ends of a haul road which connects to the area leased by Lafarge. A third bridge to the Carthagena Estate is also locked but does not appear to have been used for some time. The haul road (up to 6m wide and constructed to take heavy vehicles with a compacted gravel/ macadam surface) is the principal 'organising element' in the site providing easy access and a reference point in an otherwise confusing mosaic of landscape elements.

The site's isolation is further heightened by the presence of heavy screening vegetation along much of the eastern boundary so much so that the visitor is unaware of the rivers Lee and Lynch that form the eastern boundary. Further large blocks of secondary woodland and tall scrub fringe the principal north-south route resulting in a more enclosed character in the eastern part of the site. The western area is more open with areas west of the railway clearly visible. Its character is nevertheless remote.

The legacy of mineral working is clearly evident in the areas leased to Lafarge – heaps of sands and gravels, extensive areas of hardstandings and compacted ground, gantries, overhead wires, the remains of sheds and evidence of demolition and breaking out as Lafarge progress with their remedial works at the end of their lease. In other places evidence such as silting ponds is less obvious having become colonised by native vegetation. These features further emphasise the desolate and remote character of the eastern part of the site. Some of these elements pose potential safety risks.

The western part of the site has a different character with far less obvious evidence of mineral working. It is dominated by large areas of tall grassland and scrub. Access is difficult with few paths or faint tracks. The scrub limits visibility. There are clumps of taller trees along the western boundary and there are a number of areas of open water with steep inaccessible bramble covered banks. The terrain is lumpy in places, which combined with vegetation, creates numerous trip hazards which in the context of the site's remoteness would be a cause for concern if there was unlimited public access.

Both east and west sites individually, and combined, form an extraordinary character and resource so close to London.

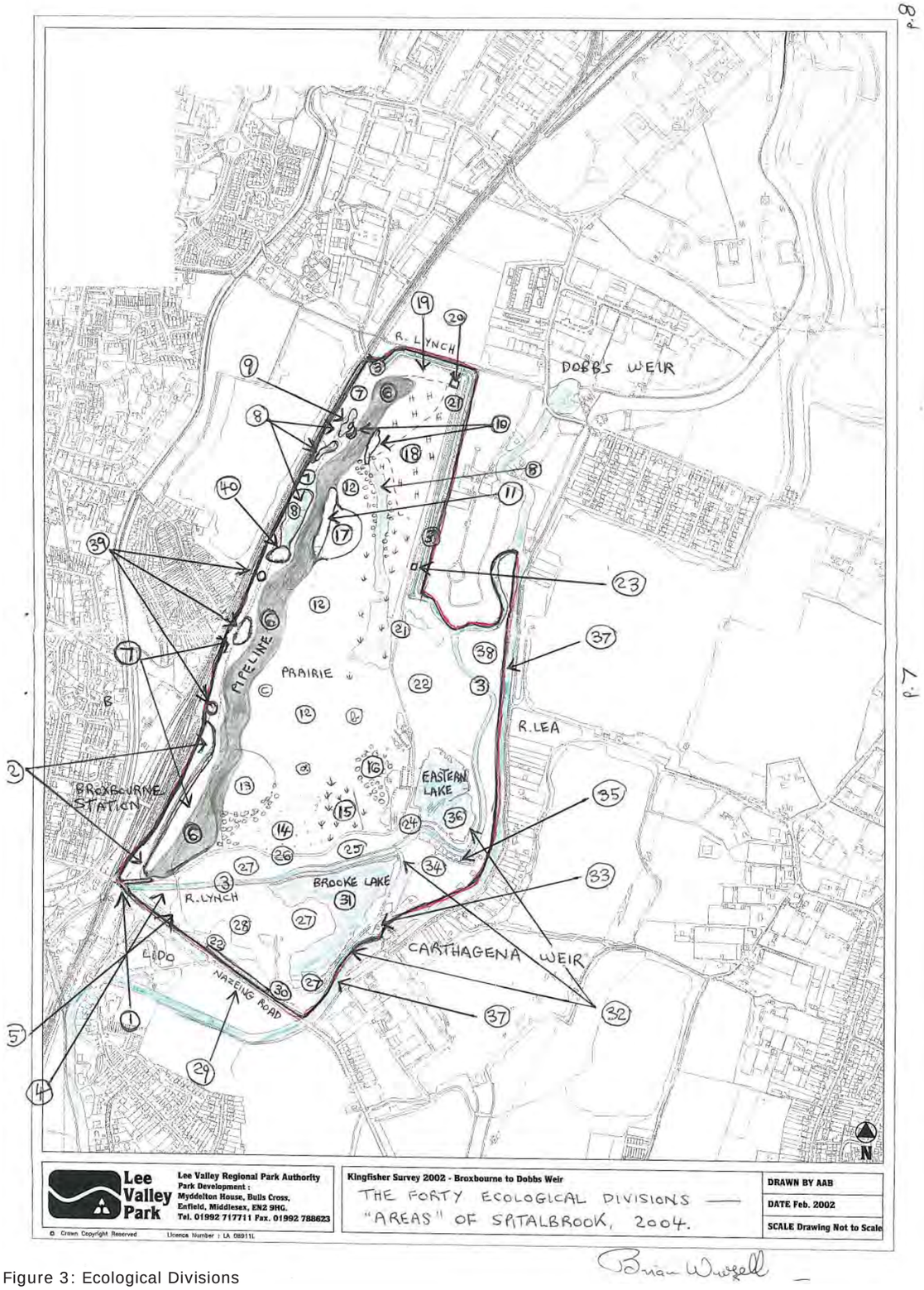


Figure 3: Ecological Divisions

Shallow water - to be retained and made good to form two areas of scrapes / marsh

Clean gravel spoil heaps - new material for the proposed ruderals trial areas

Proposed Sand Martin nesting cliff

Ecological appraisal

Spitalbrook stream runs alongside the railway line bordering the west of the site and the River Lea forms the border of the site to the south and east. A significant area of the site has previously been used for gravel extraction. This has since been in filled and colonised by grassland and scrub habitats. Other parts of the site were at the time of survey still being used as holding and sorting areas for minerals.

This large site supports a relatively diverse mosaic of habitats including a variety of grassland types, tall ruderal vegetation, hawthorn dominated scrub, open water and wetland habitats. There are several large areas of hard standing that are being colonised by a variety of bryophyte and stonecrop species. There are no signs of any recent management of the vegetation across the site. This is likely to have resulted in the spread of aggressive ruderal vegetation, dominated by goat's rue *Galega officinalis*, and false oat-grass *Arrhenatherum elatius* dominated rank grassland which now covers much of the site. It is likely that this spread of ruderal vegetation and rank grassland has been at the expense of more ecologically rich grassland which is still found in isolated patches across the site. Here red fescue *Festuca rubra* is the dominant grass with frequent timothy grass *Phleum pratense*, creeping bent *Agrostis stolonifera* and rough meadow-grass *Poa trivialis*. Also occasional in these areas are lesser stitchwort *Stellaria graminea*, bird's-foot trefoil *Lotus corniculatus* and hairy tare *Vicia hirsuta*.

A series of protected species surveys were implemented across the site in 2004-2007 (full reports included in **Annex 1**). This did not include a great crested newt survey but a data search associated with this work did record the presence of great crested newt within 500m of the site. Other protected species surveys recorded the presence of grass snake and badger.

Four species of bat were recorded using the site including common 45kHz pipistrelle *Pipistrellus pipistrellus*, soprano 55kHz pipistrelle *Pipistrellus pygmaeus*, Daubenton's *Myotis daubentonii* and noctule *Nyctalus noctula*. However no bat roosting sites were identified. Any future management of the site should take account of the presence of these species.

The cessation of activity by Lafarge on the site has created the opportunity for a large area of habitat creation work. Given the mosaic of habitat types present on site and the presence of some areas UK BAP Priority Habitat, namely 'Open Mosiac Habitats on Previously Developed Land', it is thought that this opportunity could be used to create a range of substrate types and settings and allow vegetation to naturally colonise these areas. This could lead to the development of a large area BAP habitat within the site.

Recent local change

Whilst awareness of the Lea Valley will no doubt have increased following the Olympic and Paralympic Games it is unlikely that this will have permeated to Spitalbrook. On the wider scale this has probably initiated a step change in perceptions for many people from across the region both in terms of proximity and what it has to offer. It is likely that this will have a residual effect with visitor numbers increasing. The study area with its proximity to Broxbourne station is well placed to benefit should the environmental strategy consider this appropriate.

There are two other recent changes that are relevant to the study area. These changes are:

- The most obvious change will occur within the site once Lafarge's lease is returned and that part of the site is restored. This is expected within the next six months. There will no longer be restricted access because of lease and land use issues. This provides both significant opportunities and challenges.

- LVRPA's Dobbs Weir campsite to the north-west is undergoing a phased refurbishment. This will provide new and better overnight pitches.

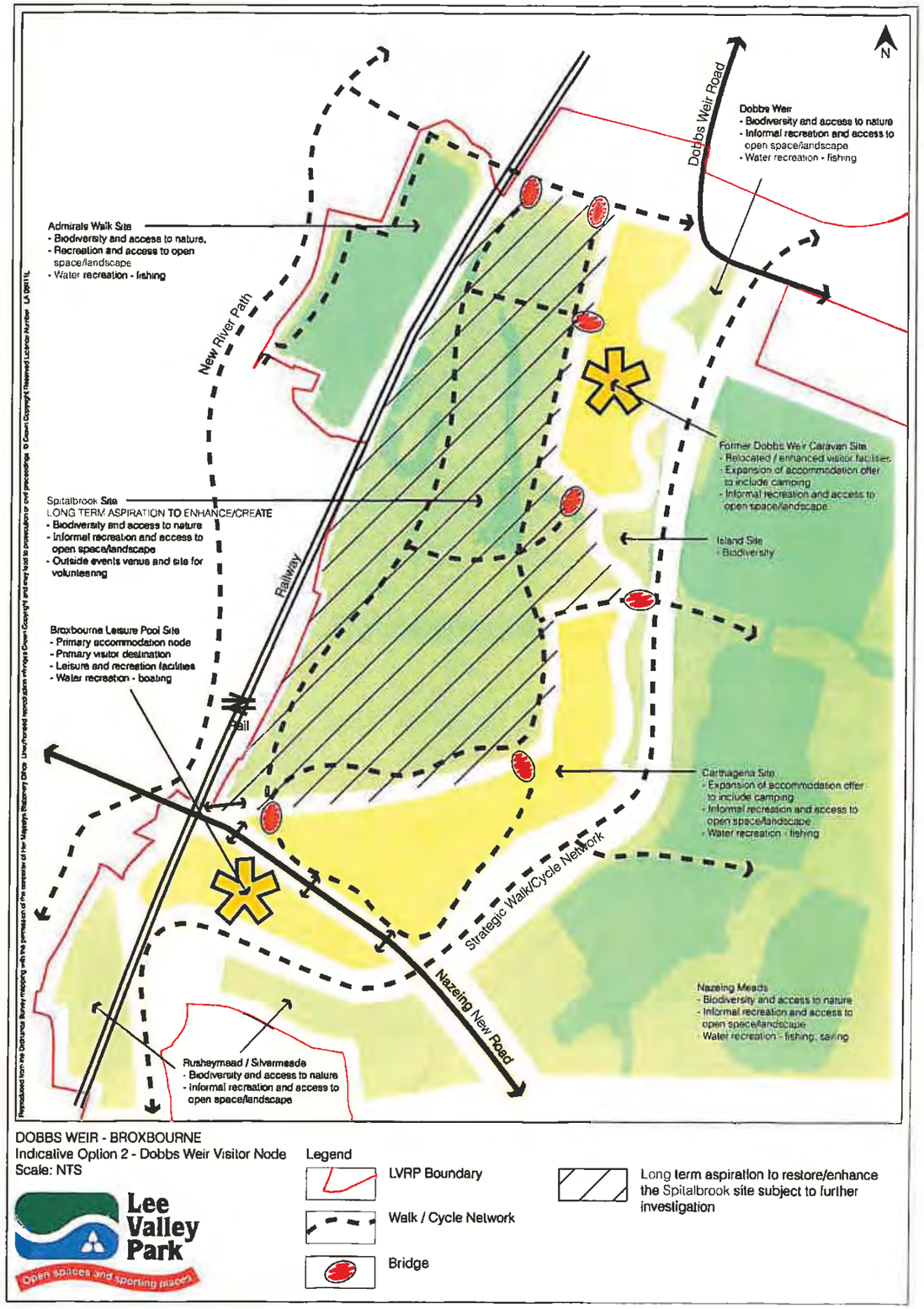


Figure 4: Dobbs Weir option 2 proposals

Access bridges require safety modification but otherwise provide excellent secure access to the site

Japanese Knotweed infestation along haul road and locally in NW sector of site

North haul road - to be regraded and locally repaired to form shared use link

Principal issues

- The extreme lack of public access
- The degree to which the site should be publically accessible
- The role of the site and its purpose
- Safety and security given its remoteness
- Management objectives and funding – the appropriate degree of intervention
- Balancing increased access and safety issues
- The need to achieve an agreed position with Lafarge regarding restoration
- The extent to which industrial dereliction is accepted or changed
- Contamination

Any strategy for redressing these issues needs to be mindful of the restricted funding to initiate and maintain change.

LVRPA objectives

The Park Plan (2000) identifies the area as a landscape conservation area where proposals should focus on the protection and enhancement of existing landscape features.

The relevant area objectives for landscape character Area 2 in the LVRPA's landscape character assessment are to:

- Protect and conserve areas of visually strong landscape character
- Retain open views to the rural valley sides that contribute a positive image to the park
- Reassess and rationalise the signage used within and at the boundaries of the park
- Improved maintenance of verges and fences to present a more positive and cared for image
- Encourage landowners to improve maintenance and planting on their land
- Develop woodland planting initiatives to provide increased visual structure
- Improve appearance of recreational features associated with the lakes
- Investigate means of rationalising the existing road structure including traffic calming, road closure and the provision of cycle routes.

More specifically for Spitalbrook the LVRPA's stated aims are to:

- Focus on the area within the red line boundary but provide a legible landscape with both the River Lee Country Park to the south and Regional Park to the north
- Provide planting creating a transition across the site from close cropped grassland adjacent to the rail line to trees and shrubs around the fisheries
- Support high biodiversity values which accord with the Authority's BAP
- Identify a landscape corridor within which a primary access, north – south, through the site from the Dobbs Weir caravan site to Nazeing New Road will be provided.
- Improve access using the ramp which is part of the bridge on Nazeing New Road to improve access from Broxbourne Station and nearby housing.
- Increase the value of the river edge for species such as Sand Martin and Kingfisher
- Increase the views across the river and lakes.
- Create quiet areas for the protection and sanctuary of species.
- Create of habitats and areas for reptiles.

The paper presented to the LVRPA Planning Committee on 22nd April 2010 provides a good summary and is attached as **Annex 3**.

Strategic objectives

We suggest there are three strategic objectives:

- **To play to its strengths** taking advantage of its relative remoteness both visually and in terms of access, and by creative use of the post-industrial legacy.
- To accommodate **negative attributes** either through selected adaptation or through access control.
- To **make maximum use of Lafarge's required restoration** using this as a catalyst for change whilst delivering important new landscape and ecological infrastructure.
- **Creative use of access control** to allow highly targeted intervention with much of the site left unchanged.
- To allow for **subsequent further enhancement** if and when funding opportunities arise.

Given the urgent need to close out Lafarge's lease, the third objective needs to be prioritised.

Figure 5: Sketch masterplan

The Masterplan

Figure 5 shows the current sketch masterplan. The site is divided into two parts with a public all weather route (the adapted haul road) acting as the approximate boundary between the two parts.

The smaller, eastern part would broadly equate to the land under Lafarge's lease together with the haul road corridor and land between the haul road and rivers to the east. This area would:

- Provide vital north-south access for cyclists and pedestrians. This would provide the 'missing link' between Nazeing New Road and Dobbs Weir Road
- Provide visual access to the extensive habitats to the west.
- Provide actual close range access to a selection of existing and new habitats adjacent to the north-south route.
- Provide a test bed of new environments and surfaces which could be used to study/teach natural colonisation – 'colonisation in action'.

The larger western part would be essentially left without major intervention beyond essential management undertaken in accordance with an ecological management plan. Access to this area would be deterred and is anticipated as being restricted to nature conservation groups or occasional guided walks for the public. Restricting access in this manner will conserve the area's remote character and minimise any habitat disturbance. It will also avoid the need for unaffordable safety related works.

Access control will be affected by installation of a post and wire stock fence to the west side of the entire haul road. Lockable access gates and signage will provide key information regarding access agreements, safety issues and information on habitats and biodiversity.

More detailed proposals for this part of the site will be generated in conjunction with the LVRPA. The masterplan will then revised to show these proposals.

This strategy will provide considerable public benefit in terms of landscape and ecology with substantial areas visually accessible, if not physically. The north-south route therefore acts as a linear viewpoint.

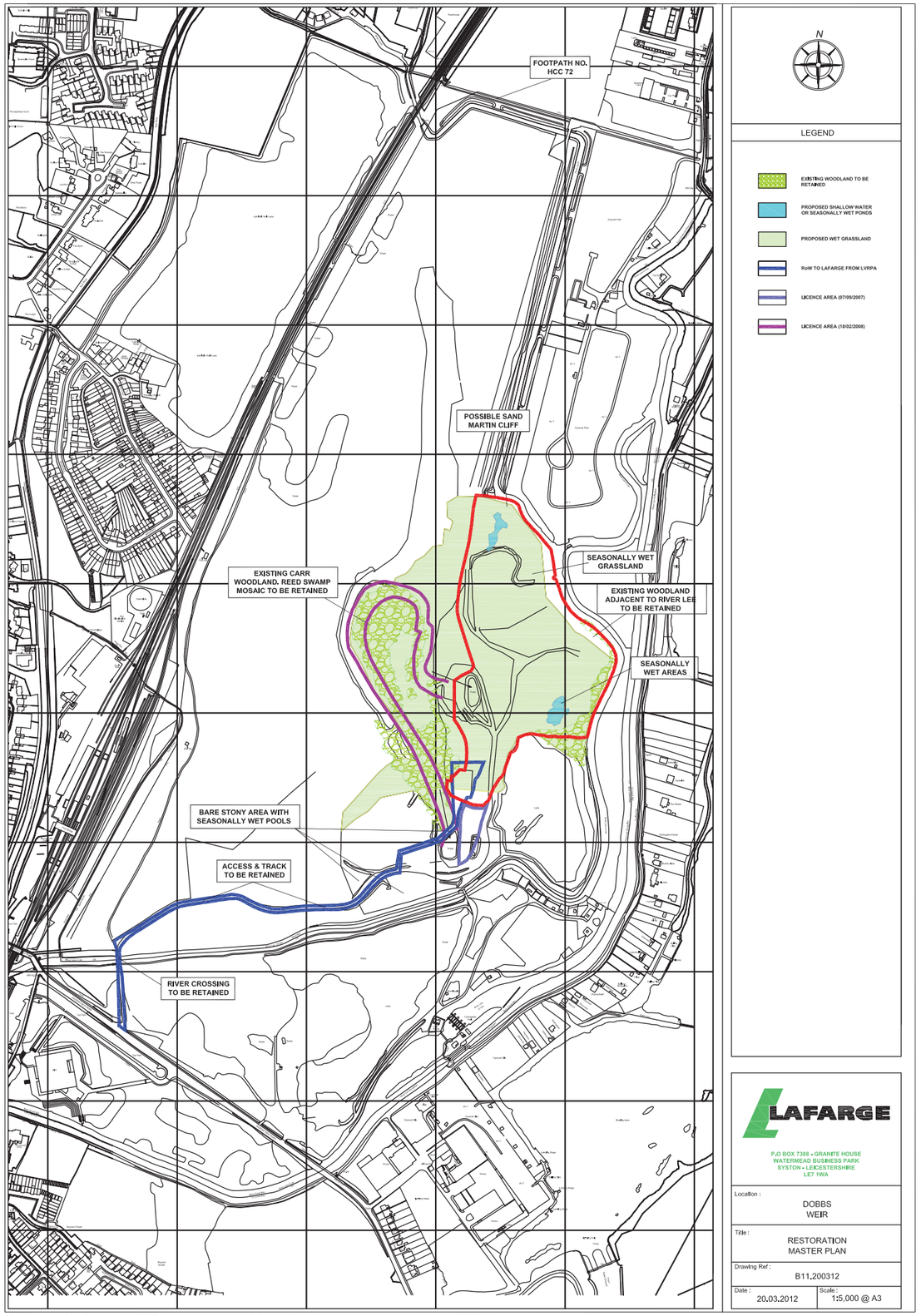


Figure 6: Lafarge Restoration Masterplan

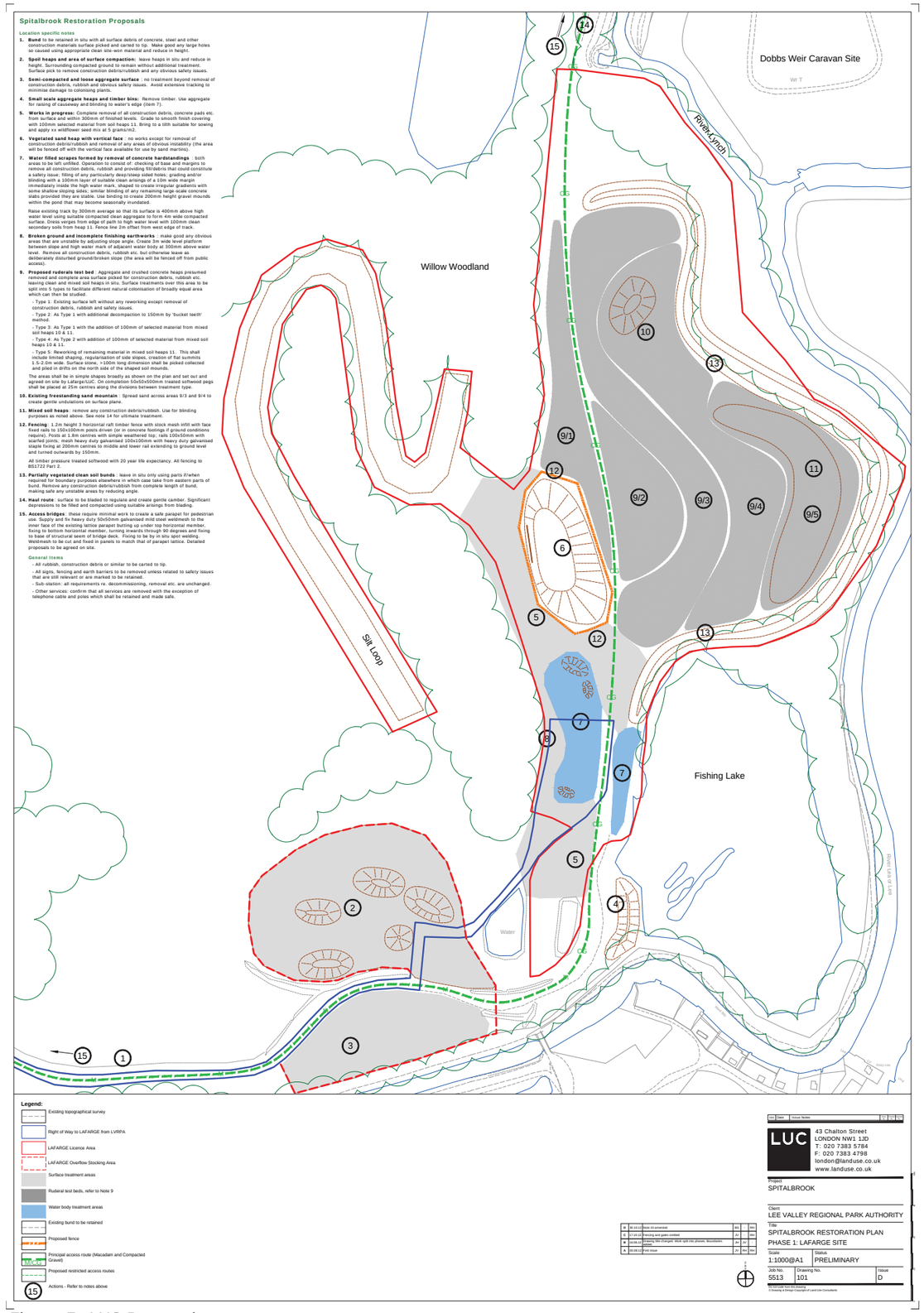


Figure 7: LUC Proposals

East area proposals

Our ecological walkover survey noted that in many ways the site's most interesting ecological aspect is its natural colonisation of compacted or soilless ground. These emerging ruderal communities are at the beginning of the colonisation process which will naturally progress through grassland and scrub to woodland. Because this is a dynamic process ruderal communities are unusual on this scale. The proposal is to showcase this process by using Lafarge's restoration to create a range of different ground conditions so that local variations in colonisation can be observed.

A site meeting was held with LVRPA and Lafarge to discuss this approach since this would constitute a change from their current restoration proposals (**see Figure 6**). These proposals had already been sent by Lafarge to Herfordshire CC the Mineral Planning Authority with no response received at that time.

The meeting discussed and agreed this change in strategy, and also the finer detail of the emerging proposals. Notes of this meeting are attached as **Annex 2**.

Following the meeting the LVRPA put in place a mechanism that provided added time for the restoration works to be generated. In parallel LUC prepared detailed restoration proposals as shown in **Annex 2**. These proposals can be summarised as:

- Scaling back of previous proposals to retain more untreated surfaces, with reduced breaking out and decompaction, and reduced areas of blinding with clean soils. This will result in a significant reduction of earthworks, and to a lesser extent reduced carting to tip where low value stockpiles will now be retained on site.

- The creation of two ground water filled shallow water bodies from areas where extensive hardstanding had been broken out. Their edges and pond floors will be made safe and cleaned up, and left to regenerate as scrapes/marsh.

- Removal of rubbish, construction debris etc all as previously proposed.

- In return for the reduction in earthworks and carting to tip there is a limited provision of access and safety related elements – mainly timber post and rail fencing and works to the bridge parapets so that they are safe for pedestrian use, and

- A limited amount of additional time or expenditure that can be called upon to undertake work that is not yet apparent.

These proposals have been subject to subsequent review by both LVRPA and Lafarge with resultant minor changes to the proposals – principally the reduction in the amount of fencing. However the strategy remains essentially unchanged. These proposals are shown in **Figure 7**.

These proposals will now be submitted to Hertfordshire CC as a revision to those proposals already lodged. This Interim Report will support these revised proposals.

Once approval is received Lafarge will carry out the works with LUC providing an onsite advisory role. This will allow the detailed proposals to be locally adjusted to take maximum advantage of the existing asset.

Typical area of gravels to be left to naturally colonise

Damp habitats close to Lafarge site

Goats Rue dominated NE site

Summary

Both the wider site strategy and the detailed proposals for the eastern (Lafarge component) work closely with the existing site attributes. Careful interventions as set out on the proposals plans will make best use of the required restoration works. They will put in place a framework of access, safety measures, landscape and ecological enhancement that is appropriate and otherwise unaffordable. Further works can then be added as and when funds come available.

LUC

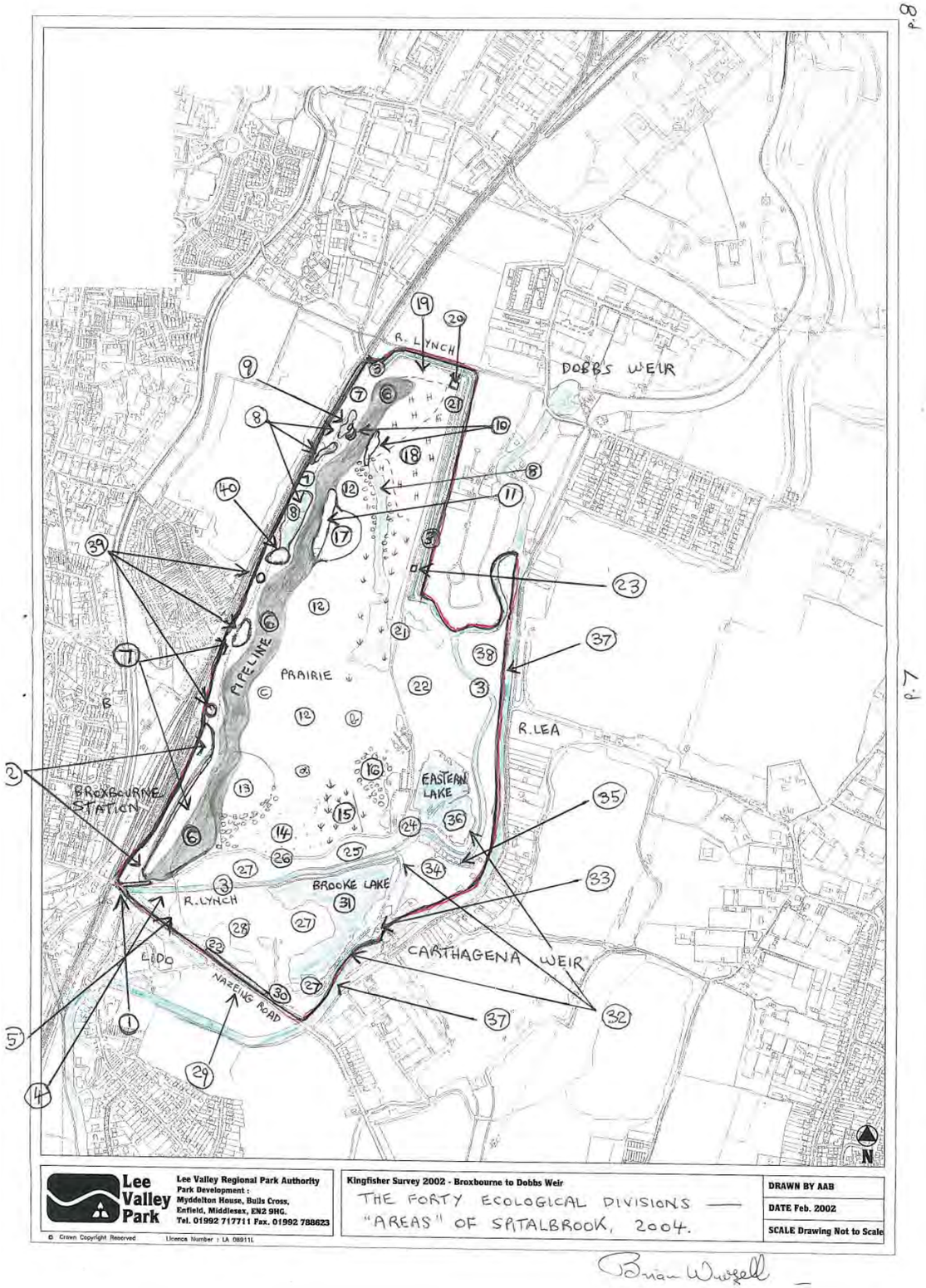
25th October 2012

Text: S:\5500\5513 Spitalbrook\B Project Working\Docs\environmental strategy with ecology.docx

Report: S:\5500\5513 Spitalbrook\B Project Working\Graphics\Report\5513_Proposals Report.indd

Annex 1

Ecological background information



Area descriptions

Area 01 - Pedestrian Viaduct
Area 02 - adjacent to Broxbourne station
Area 03 - River Lynch
Area 04 - Nazeing Road Thicket
Area 05 - Vehicle Forecourt and driveway
Area 06 - Pipeline
Area 07 - west of Pipeline
Area 08a - Western Lake a
Area 08b - Western Lake b
Area 08d - Western Lake d
Area 09 - Ragged Robin Hollow
Area 10 - Cladonia site
Area 11 - Marsh Dock Swamp
Area 12 - Prairie
Area 12a - Prairie
Area 12b - Prairie
Area 12c - Prairie
Area 13 - Quality grassland
Area 14 - Dry stony flats
Area 15 - Wet stony flats
Area 17 - Canary Swamp
Area 18b - Hawthorn scrub central
Area 18c - Hawthorn scrub south
Area 19 - Sowthistle waste
Area 20 - young Willow carr
Area 21 - Stony vehicle track
Area 23 - Lichen sanctuary
Area 24 - Fine compacted gravel
Area 25 - Calodendron Hollow
Area 26 - Vehicular track
Area 27a - Willow Wilderness
Area 27b -Willow Wilderness
Area 27c -Willow Wilderness
Area 28 - Birch and Buddleja Woodland
Area 29 - Nazeing Road tree screening
Area 30 - Trailer clearing
Area 31 - Brooke Lake
Area 32 - Fishermen's Footpaths
Area 33 - Carthagena Car park
Area 34 - Eastern Woodland
Area 35 - Trailer Village
Area 36 - Eastern Lake
Area 37 - River Lea
Area 38 - Eastern Arm
Area 39 - Relict Oak Woodland
Area 40 - Grey Poplar Swamp

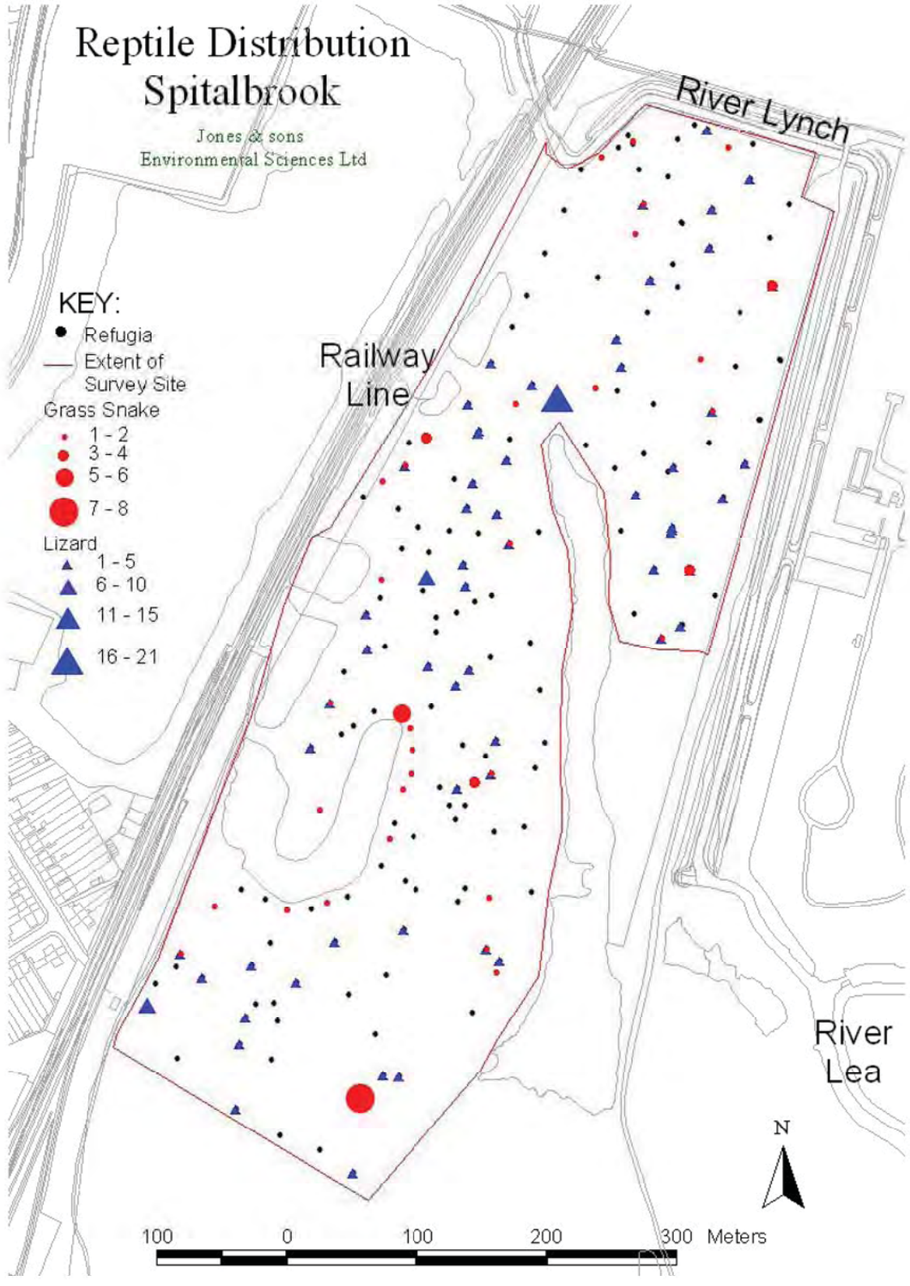
Full data on species recorded in each area, which runs to 18 pages, is available seperately

SPITALBROOK NORTH AREA
BROXBOURNE
HERTFORDSHIRE

REPTILE REPORT
2006

Report Date December 2006
Jones & sons
Environmental Sciences Ltd
21-23 North Road
Hertford
Herts
SG14 1LN
TEL/Fax 01992 552407

Map 2 Distribution of all reptiles



Jones & sons
Environmental Sciences Ltd.

16

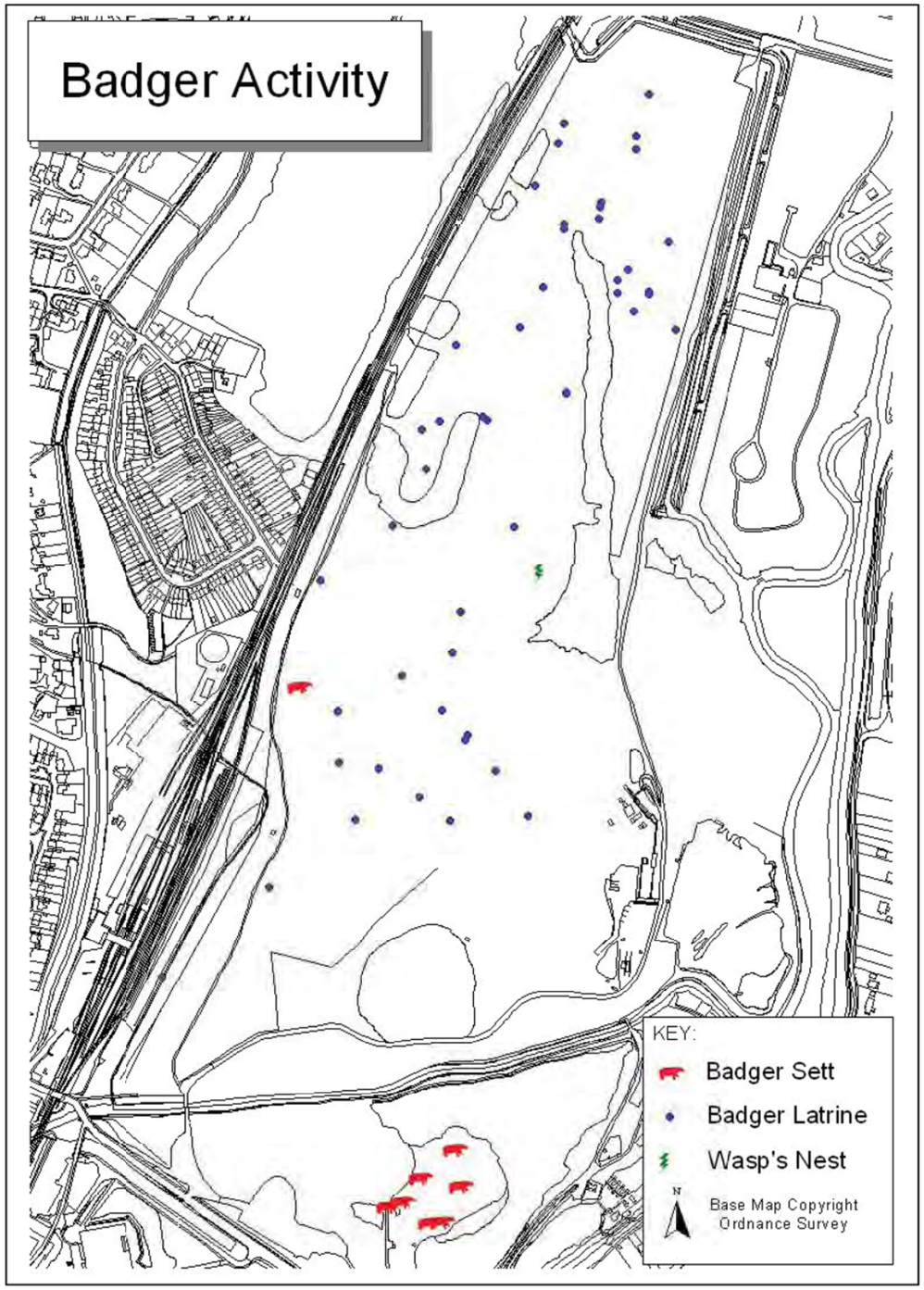
SPITALBROOK NORTH AREA
BROXBOURNE
HERTFORDSHIRE

PROTECTED SPECIES 2006 SURVEY
REPORT II

BATS, BADGERS AND OTHER MAMMALS
INCLUDING HABITAT ENHANCEMENT
MEASURES FOR MAMMALS AND REPTILES

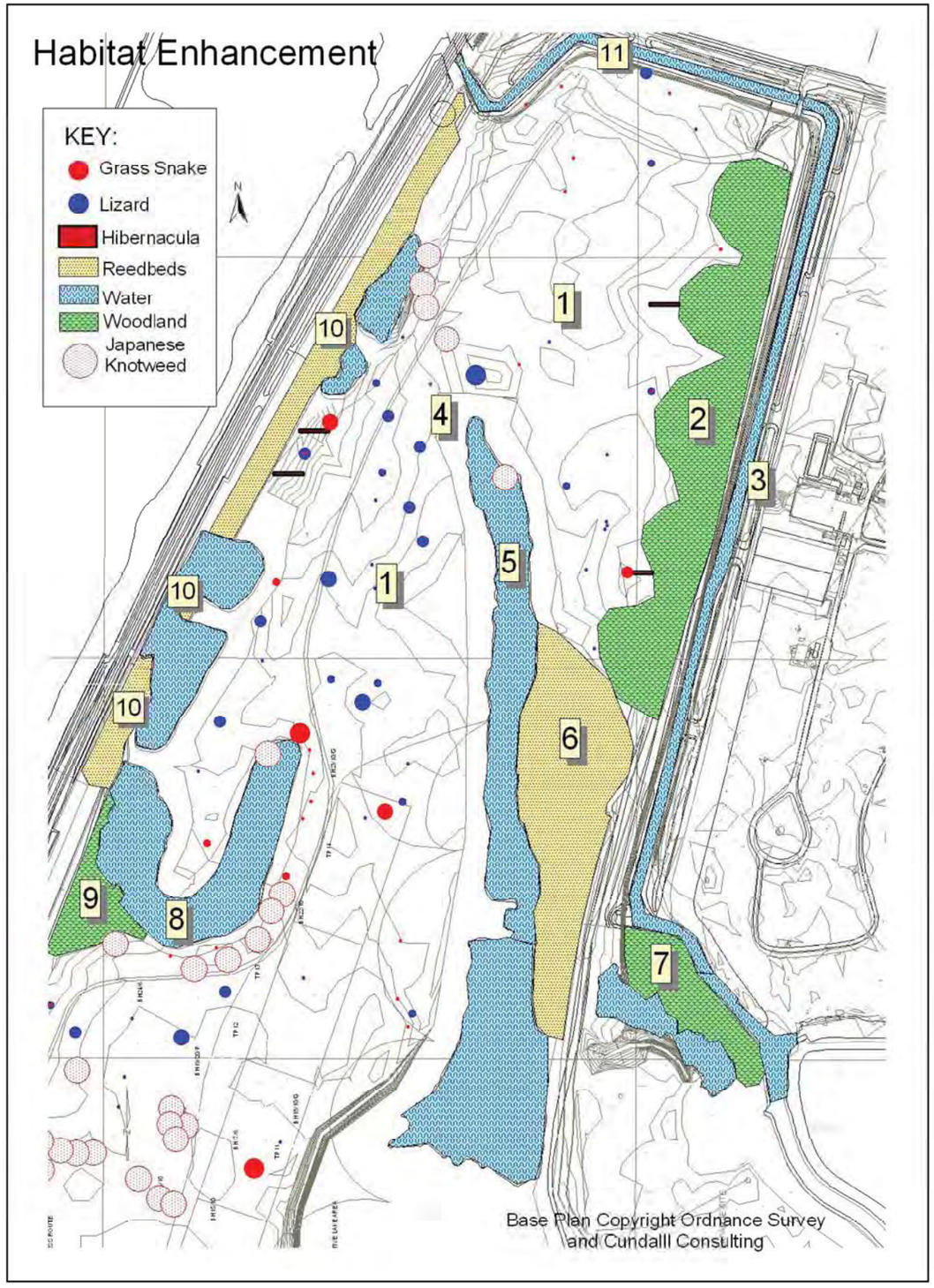
Report Date February 2007

Jones & sons
Environmental Sciences Ltd
21-23 North Road
Hertford
Herts
SG14 1LN
TEL/Fax 01992 552407



Jones & sons
Environmental Sciences Ltd.

18



Jones & sons
Environmental Sciences Ltd.

41

Habitat Enhancement Map Key

1	Manage as structurally diverse tussocky grassland. Maximize south facing banks. Create compost areas for grass snakes. Clear the young hawthorn scrub. Retain the occasional more mature tree and patch of bramble
2	Create a woodland area. Retain bordering scrub to create an irregular edge habitat. Plant native trees of benefit to foraging badgers. Place log piles around the woodland edge. Create hibernacula on grassland border. Thin some of the scrub within the woodland.
3	Remove rubbish. Clear scrub along the west bank of the river, retaining the more mature trees and providing sufficient cover for otters. Retain the trees and scrub along the east bank of the river. Retain overhanging branches, ivy cover and areas of dead wood. Pollard trees if considered necessary. Erect bat and bird boxes.
4	Retain bramble and scrub cover at the northern end of the former River Lynch.
5	Create a greater diversity within the watercourse. Retain the more mature trees around banks. Clear access pathways to the water's edge. Managed reeds to create a scalloped edge.
6	Manage as Reedbed habitat
7	Protect and manage as wet woodland. Retain dead wood habitat, ivy covered trees and split branches. Provide otter lying up areas. Erect bat and bird boxes.
8	Clear scrub around south and east boundary retaining the occasional tree with overhanging branches. Retain scrub along the west bank to provide shelter. Manage the grassland area as wet grassland.
9	Retain mature trees. Erect bat and bird boxes. Provide dead wood habitat.
10	Clear dominant *Typha* from east edge leaving fringe of tall aquatic vegetation along the west edge. Retain trees. Clear bramble from south and east edge. Re-profile east margin to encourage a greater diversity of aquatic vegetation. Retain strip of reedbeds bordering railway. Retain Hop plants along western edge as a food plant for the Buttoned Snout moth (UK BAP species). Provide hibernacula/ basking mounds and compost areas on high ground.
11	Clear bramble and dense scrub along south bank. Retain the more mature trees. Erect bat and bird boxes. Retain patches with overhanging branches. Retain scrub on north bank to provide shelter and cover. Plant ash and oak. Create banks suitable for water voles.

Jones & sons
Environmental Sciences Ltd.

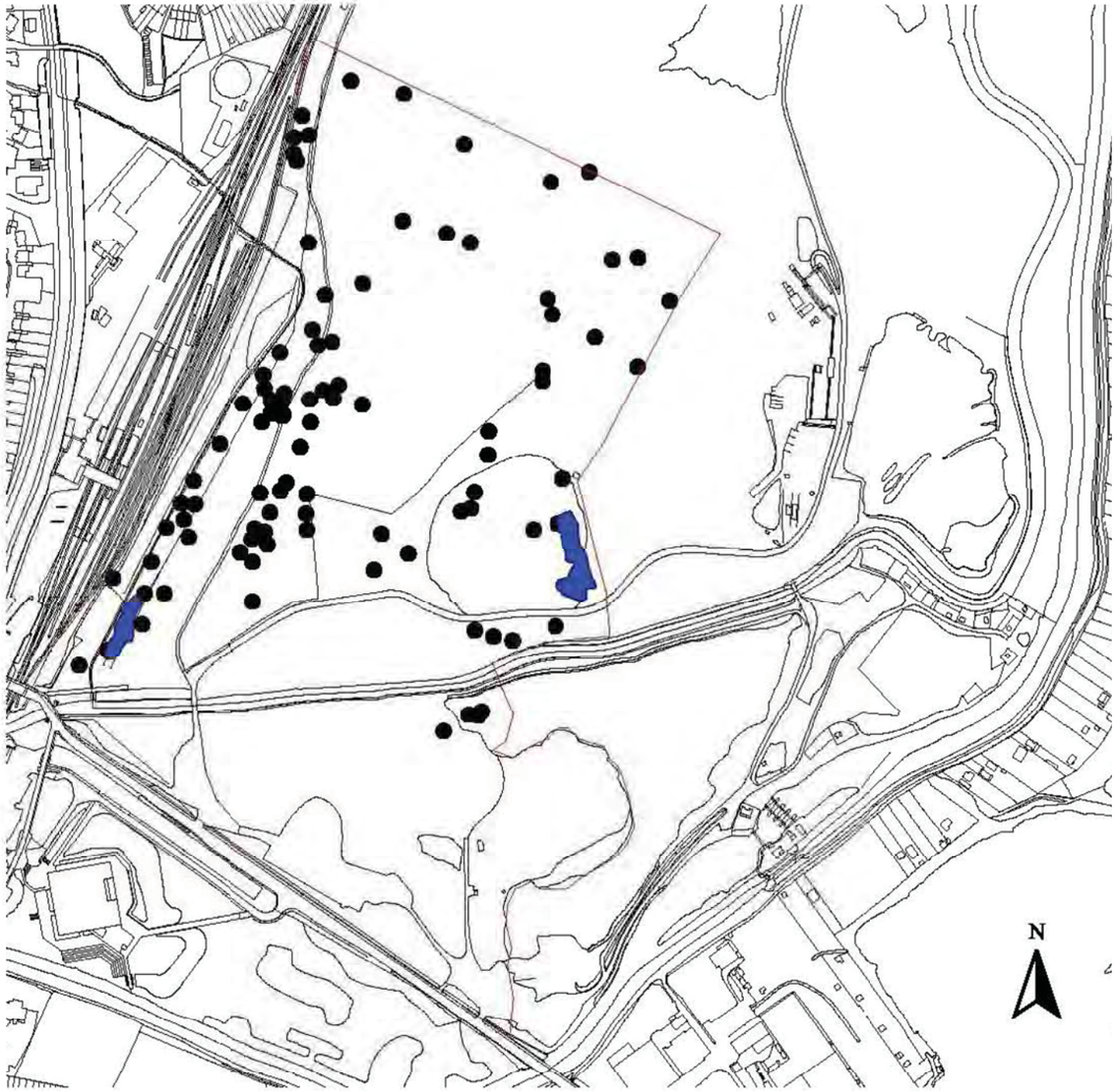
42

SPITALBROOK
FORMER GRAVEL WORKS
BROXBOURNE
HERTFORDSHIRE

AMPHIBIAN, REPTILE AND MAMMAL REPORT

By
Jones & sons
Environmental Sciences
21-23 North Road
Hertford
Herts
SG14 1LN
TEL/Fax 01992 552407

Plan showing location of Refugia on Spitalbrook.



Plan showing location of grass snakes

Photograph17: potential bat roosting sites

The area with the most potential for tree roosting bats is the area of wet woodland around the lake.

Many trees within the woodland contained abandoned woodpecker holes, which could be used as roosting sites by bats. Two areas were identified where there were clusters of trees with suitable holes. Since bats frequently like to move around roosting sites within the same area; these were considered to have a high potential to support roosting bats.

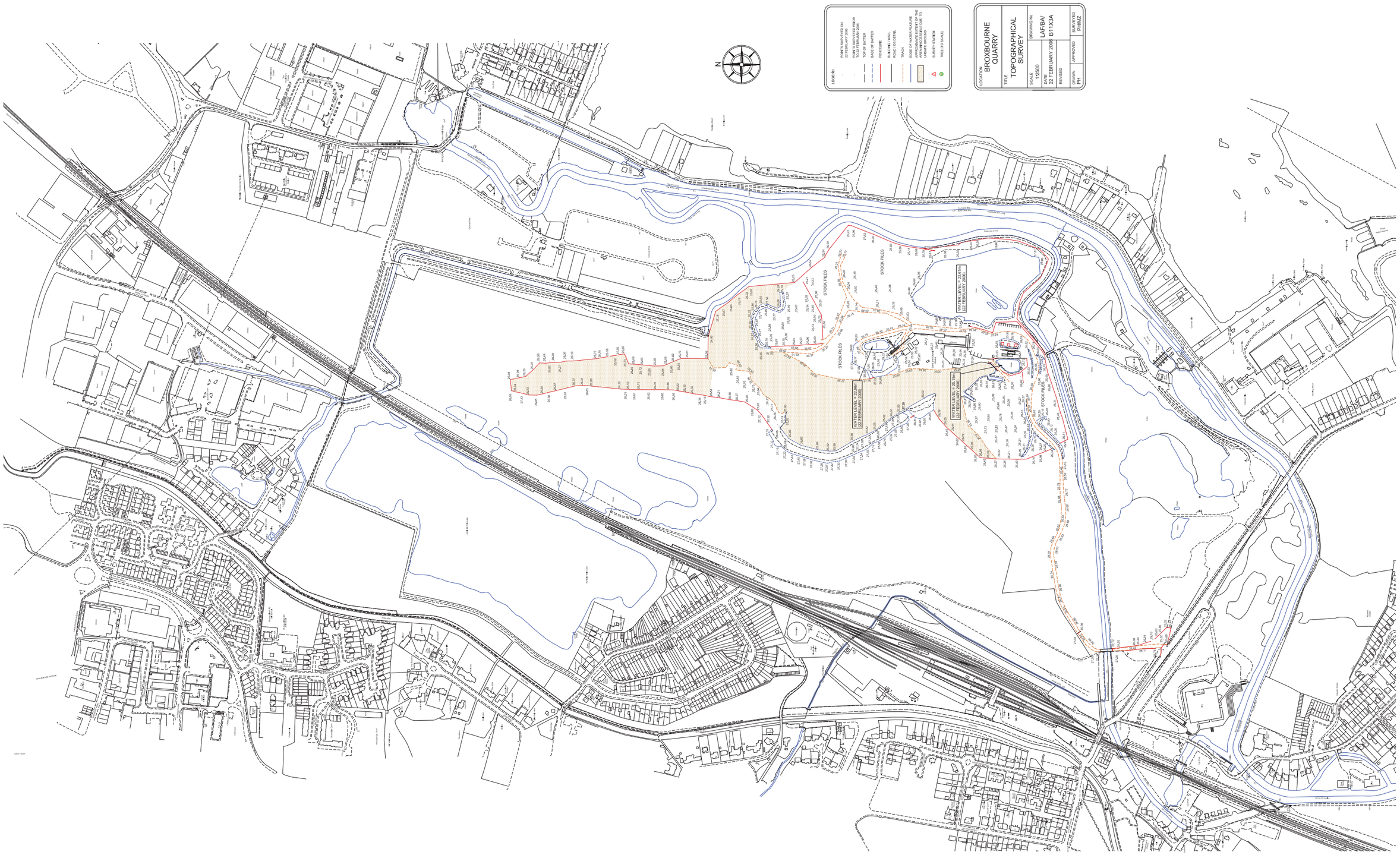
In addition to trees with obvious holes, many trees also contained split and cracked branches and fissures in the bark. The abundant standing and lying dead wood within this woodland area would also be capable of supporting a variety of insects providing good foraging habitat for hunting bats.

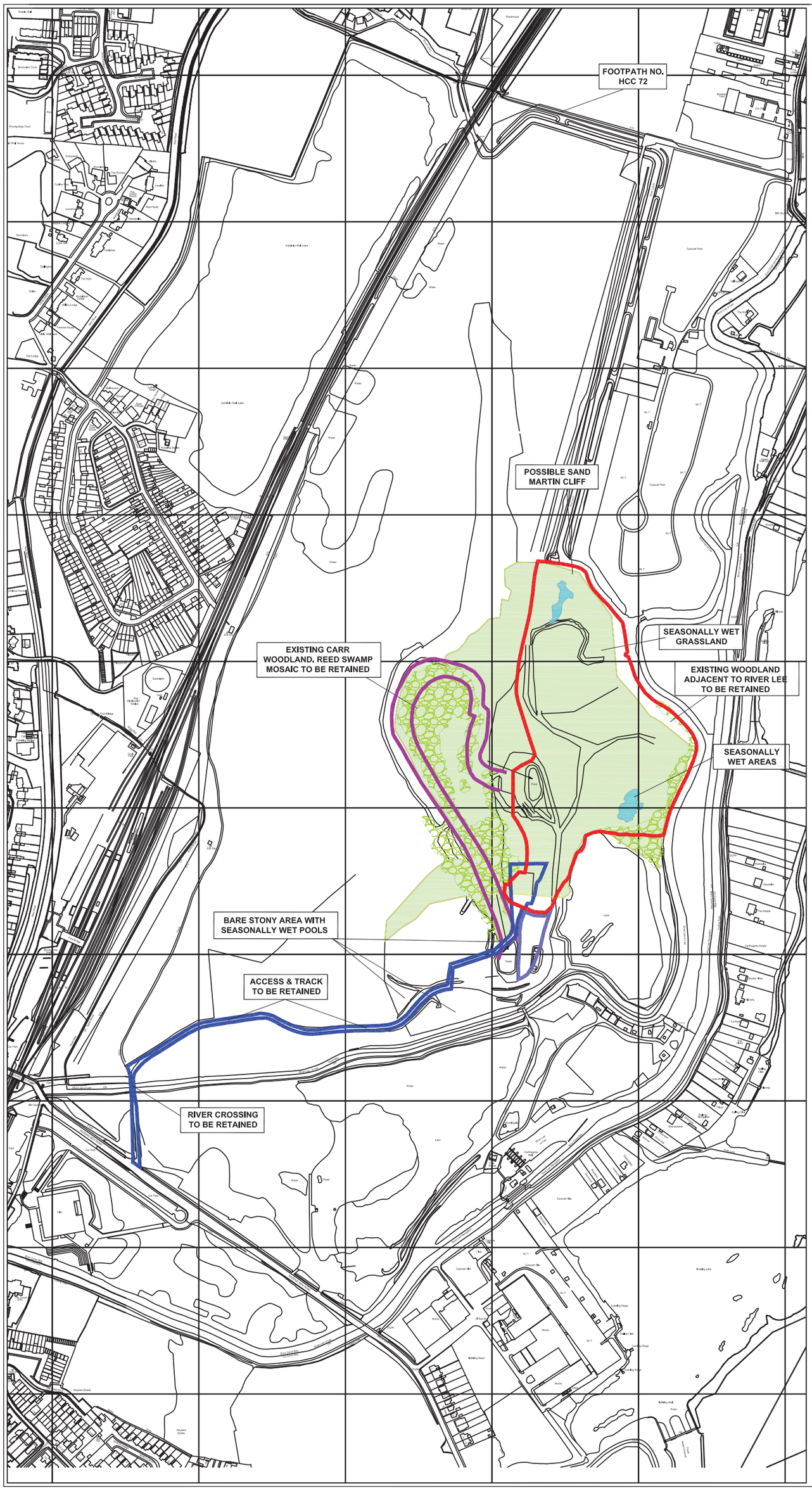
Photograph 18: holes in dead tree

Photograph 19: : fissures in bark

Annex 2

Lafarge restoration background information


LEGEND:
POINTS SURVEYED ON 22 FEBRUARY 2008
POINTS SURVEYED PRIOR TO 22 FEBRUARY 2008
TOP OF BATTER
BASE OF BATTER
FENCELINE
BUILDING / WALL
ROAD / DEETAIL
TRACK
EDGE OF WATER FEATURE
APPROXIMATE EXTENT OF THE AREA INACCESSIBLE DUE TO DENSE VEGETATION
SURVEY STATION
TREE (TO SCALE)
LOCATION
BROXBOURNE QUARRY
TITLE
TOPOGRAPHICAL SURVEY
SCALE
1:2500
DRAWING No
LAF/BA/ B11X3A
DATE:
22 FEBRUARY 2008
REVISED
DRAWN
PH
APPROVED
SURVEYED
PH/MZ
N
STOCK PILES
WATER LEVEL = 18.0m (22 FEBRUARY 2008)
WATER LEVEL = 22.0m (22 FEBRUARY 2008)
WATER LEVEL = 25.10m (22 FEBRUARY 2008)



N

LEGEND

- EXISTING WOODLAND TO BE RETAINED
- PROPOSED SHALLOW WATER OR SEASONALLY WET PONDS
- PROPOSED WET GRASSLAND
- RoW TO LAFARGE FROM LVRPA
- LICENCE AREA (07/09/2007)
- LICENCE AREA (18/02/2008)

LAFARGE

P.O BOX 7388 - GRANITE HOUSE
WATERMEAD BUSINESS PARK
SYSTON - LEICESTERSHIRE
LE7 1WA

Location : DOBBS WEIR	
Title : RESTORATION MASTER PLAN	
Drawing Ref : B11.200312	
Date : 20.03.2012	Scale : 1:5,000 @ A3

LAFARGE AGGREGATES LTD

BROXBOURNE

PLANT SITE RESTORATION

February 2012

1 INTRODUCTION

1.1 The restoration of areas described will be undertaken on the restored former sand and gravel quarry plant site at Broxbourne as shown on Plan No. B11.200312.

1.2 The former plant site will have all remaining buildings, structures and plant removed and concrete hard-standing and foundations will be broken out, crushed and removed from site together with any remaining stocks of construction materials.

1.3 The areas surrounding the weighbridge, former RMX and gravel processing plant, and former storage area will be re-graded and leveled leaving a layer of site derived materials of low nutrient value around 150-200mm deep, covering any remaining original overburden. If areas of original soils are found during the foregoing works they will be conserved for use in the final restoration earthworks. There will hopefully, be scope to use 'as-raised' gravelly materials in the former plant hopper loading ramp, and silty material situated in a heap towards the river to cover parts of the former plant site and stocking areas as a low-nutrient substrate material, (soil substitute).

1.4 Some areas around the former plant site will be seeded with a grassland mixture, to provide some colour and botanical interest, adjacent to the former quarry haul road through the site which will be retained as a possible permissive public access route. Parts of the remaining area will be left bare to naturally regenerate. This should allow some more interesting plants to develop without competition from arable weeds that would flourish if more fertile materials or soils were used to restore the area. Further areas will be left as a stony, gravely surface, which may be suitable as a nesting habitat for ground nesting birds, and reptiles.

1.5 Several shallow 'scrapes' about 350mm deep, providing a seasonally wet area, will be formed in areas near to the river and to the south of the former office/weighbridge location to provide habitat for insects and amphibians.

2 CULTIVATIONS AND SEEDING

2.1 Following restoration, areas with more soil-like surface will be seeded with a grassland seed mixture, (for lowland droughty soils), at a suitable time of year, mid to late August is ideal. The surface will be loosened to relieve surface compaction as required. Surface materials will be replaced using loose tipping, with no wheeled traffic on the final restored surface save the low ground pressure dozer leveling the materials to the correct depth.

2.2 Suitable cultivations will be carried out on the restored surface to be seeded. These might include heavy discing, followed by drag harrowing depending on conditions. Any stones or debris exceeding 100mm in any dimension will be picked and disposed off site.

2.3 When a suitable tilth is produced the grass seed mix will be either, broadcast or drilled at the required rate, harrowed and/or rolled in. Seeding will be undertaken in spring (March/April) or late summer (August/September).

2.4 The seed mixture used to establish the grassland area will be a U16 grassland mixture, suitable for droughty, poor soils and which will encourage insects and birds.

2.5 See Appendix 1 for details of the seed mixture.

2.6 The grass seed mix will be established following cultivations in August/September.

3 MAINTENANCE PROGRAMME FOR THE GRASSLAND AREA

Year 1

3.1 In the first year following establishment the sward will be left to grow and seed in summer. A cut will be taken in September - October to a height of 40 - 70mm. after the plants have flowered and shed seed, if required.

3.2 If there are any problem weeds they will be individually cut or spot treated before they can seed in late spring early summer.

Years 2 - 5 and Subsequently

3.5 A cut will take place in September-October to a height of 40-70mm as before. The cut will be following flowering and seed shedding.

4 'SCRAPES' AND EXISTING AREAS THAT ARE SEASONALLY WET

4.1 Any existing seasonally wet areas will be left largely undisturbed during the restoration work on site. New 'scrapes' will be created adjacent to the river boundary of the former stocking area, and on the former stocking area south of the former office/weighbridge area, adjacent to the 'through track'. A dozer will push out material to create a shallow depression, about 300mm deep with smooth, shallow sides. Rainwater will collect in this depression during the winter months and gradually dry out during the spring and summer, and then becoming wet again during the autumn. This variation of dry and dampness will be valuable for insects, amphibians and various marginal plant species.

5 MAINTENANCE PROGRAMME FOR SEASONALLY WET AREAS

Years 1 -5 and Subsequently

5.1 The areas will be checked to see if any weed or plants become too dominant, thus preventing other plant species establishing. If necessary small scale clearing of problem vegetation will be undertaken in a dry period during the winter months. The areas will largely be left to develop naturally over time.

6 BARE GROUND HABITAT

6.1 Areas identified as being suitable to create bare ground habitat, to attract insects and reptiles, will be left undisturbed during the restoration works. They are characterised by being stony, sandy and gravely, reflecting the materials worked on site when the area was worked for mineral. The gravely surface will warm up rapidly with sunlight and should be attractive to reptiles and insects. Suitable areas will be the former stocking area to the south of the former weighbridge, adjacent to the 'through track', and areas on the former main stock yard.

7 MAINTENANCE PROGRAMME FOR BARE GROUND HABITAT

Year 1 and Subsequently

7.1 The bare ground will be inspected and any unwanted invasive vegetation will be removed on a regular basis. Due to the infertile nature of the substrate little vegetation growth is anticipated on these areas.

Appendix 1

RE12 Mixture (U16 Grassland mix Drought Land)

3.1%	Achillea millefolium	Yarrow
1.4%	Anthyllis vulneria	Kidney Vetch
1.4%	Gallium verum	Lady's Bedstraw
1.4%	Hypochoeris radicata	Cat's Ears
1.4%	Leontodon hispidus	Rough Hawkbit
1.4%	Lotus corniculatus	Birdsfoot Trefoil
4%	Plantago lanceolata	Ribwort Plantain
1.4%	Plantago media	Hoary Plantain
1.4%	Rumex acetosa	Common Sorrel
26%	Agrostis capillaries	Common Bent
8%	Agrostis stolonifera	Creeping Bent
8%	Anthoxanthum odoratum	Sweet Vernal Grass
8%	Dactylis glomerata	Cocksfoot
33%	Festuca ovina	Sheep's Fescue

SPITALBROOK, LEA VALLEY

NOTE OF SITE MEETING WITH LAFARGE, AUGUST 1st 2012

Present

Laurence Cooper	Production Manager, Lafarge
Richard Millican	Regional Restoration Manager, Lafarge
Claire Martin	Planning Policy Officer, LVRPA
Richard Hannay	Principal LUC
James Virgo	Landscape architect LUC
Eric Heath	Ecologist LUC

Purpose of meeting: to discuss current restoration proposals for areas affected by Lafarge leases

1. Lease was confirmed as currently ending on 10th Sept '12

2. Principal Lafarge (LF) actions before then are:
   - Removal of reusable stockpiles of aggregate/crushed concrete
   - Execution of current restoration proposals including site tidy

3. Works will only cover areas covered on their submitted drawings (lease areas) although it was noted that there are currently stockpiles and working areas formed by LF that are outside of these areas. It is understood that they will restore/make good these areas.

4. Restoration proposals have been lodged with Herts but no known response and not yet approved. No Pre App discussion undertaken.

5. It is understood from subsequent discussion with S Wilkinson that the proposals have been agreed by LVRPA Estates.

6. The restoration proposals consist of the Restoration Master Plan and a short text document (both already received from LVRPA). There are no further documents either for submission to Herts or construction drawings for the restoration contract.

7. Restoration works will be carried out using hired plant and operators operating in accordance with the proposals and twice weekly visits from Richard Millican assisted by the daily presence of Richard Allen (LF) ex site manager. The contractor would be employed on a day works basis.

8. Estimated time for restoration works is three weeks, preceded by two weeks for removal of reusable stockpiles. The programme is therefore very tight.

9. All services have been shut down. The electricity sub-station will be removed by the statutory undertakers. LF is concerned that this work may not be complete by Sept 10th. Phone posts and o/h lines are to remain insitu at the request of LVRPA.

10. Existing stockpiles consist of:
    (a) heaps of material which have resale value such that it is worth LF removing from site;
    (b) heaps of relatively low value aggregate or similar which will have a net cost to remove from site;
    (c) mixed soil and/or site arisings;
    (d) tipped material and construction materials.

    Currently all (a) to (d) is proposed as being removed.

11. LF confirmed that they would be willing to provide a topo survey and recent stockpile survey (these had already been received by Weds evening)

12. LF confirmed that they would be unwilling/unable to work outside the lease areas (but see 3 above)

13. LF explained the proposals which are mainly a significant reduction in the amount of hardstanding achieved in part by excavation and backfilling with material from heaps (c) and the bund along the N side of the macadam access road. Excavated material would be placed in water filled voids created by the removal of concrete hardstandings. Elsewhere heavily compacted ground in the vicinity of stockpiles would be blinded by material from large (c) heaps in the north of the site and clean bunds around the eastern perimeter of their working area. Restored areas would be sown with a wildflower mix.

14. The scheme has appropriate ecological objectives but involves considerable earthworks and does not especially value some of the ruderal habitats that are developing on hardstandings. These habitats are considered both of interest in themselves and in the way that they extend the habitat range on site.

15. Varying the restoration proposals was discussed with LF who agreed that they would be in principle willing to do this provided:
    - Mike Pencock/senior LF personnel agreed
    - The effects were cost neutral
    - The work could be undertaken by Sept 10th or this date somehow extended, and
    - This would be acceptable to Herts.

16. It was agreed that LUC would discuss with S Wilkinson the way forward and revert to LF asap.

17. Discussion with S Wilkinson on 1.8.12 pm revealed the possibility of agreeing what would be in effect a conditional extension to the lease which would have no financial implications for either side. This would have considerable benefit in that it would allow time to generate and agree with LVRPA and LF what would be acceptable and cost neutral revisions to the current proposals.

18. The alternative which was briefly discussed with Richard Millican would be an informal arrangement whereby RM agreed to vary his instructions to the restoration contractor such that they were a better fit with the potential revised restoration objectives and proposals. Because of the inevitable time pressures and the inability to have proper discussion with LVRPA and for LUC to undertake more of the wider study and use this to inform the proposals this is considered a worst case fall back approach.

19. S Wilkinson will seek to achieve LVRPA agreement to point 17 above and revert to LUC before Friday 3rd close.

20. Leave: S Wilkinson 6-19 August. R Hannay 9-27 August (James Virgo to deputise ion his absence)

LUC

1st August 2012

S:\5500\5513 Spitalbrook\B Project Working\Docs\Lafarge mtg notes 120801.docx

Spitalbrook Restoration Proposals

Location specific notes

1. **Bund** to be retained in situ with all surface debris of concrete, steel and other construction materials surface picked and carted to tip. Make good any large holes so caused using appropriate clean site-won material.

2. **Spoil heaps and area of surface compaction:** leave heaps in situ. Surrounding compacted ground to remain without additional treatment. Surface pick to remove construction debris/rubbish and any obvious safety issues.

3. **Semi-compacted and loose aggregate surface** : no treatment beyond removal of construction debris, rubbish and obvious safety issues. Avoid extensive tracking to minimise damage to colonising plants.

4. **Small scale aggregate heaps and timber bins:** Remove timber. Use aggregate for raising of causeway and blinding to water's edge (item 7).

5. **Works in progress:** Complete removal of all construction debris, concrete pads etc. from surface and within 300mm of finished levels. Grade to smooth finish covering with 100mm selected material from soil heaps 11. Bring to a tilth suitable for sowing and apply xx wildflower seed mix at 5 grams/m2.

6. **Vegetated sand heap with vertical face** : no works except for removal of construction debris/rubbish and removal of any areas of obvious instability (the area will be fenced off with the vertical face available for use by sand martins).

7. **Water filled scrapes formed by removal of concrete hardstandings** : both areas to be left unfilled. Operation to consist of: checking of base and margins to remove all construction debris, rubbish and providing fill/debris that could constitute a safety issue; filling of any particularly deep/steep sided holes; grading and/or blinding with a 100mm layer of suitable clean arisings of a 10m wide margin immediately inside the high water mark; similar blinding of any remaining large-scale concrete slabs provided they are stable.

   Raise existing track by 300mm average so that its surface is 400mm above high water level using suitable compacted clean aggregate to form 4m wide compacted surface. Dress verges from edge of path to high water level with 100mm clean secondary soils from heap 11. Fence line 2m offset from west edge of track.

8. **Broken ground and incomplete finishing earthworks** : make good any obvious areas that are unstable by adjusting slope angle. Create 3m wide level platform between slope and high water mark of adjacent water body at 300mm above water level. Remove all construction debris, rubbish etc. but otherwise leave as deliberately disturbed ground/broken slope (the area will be fenced off from public access).

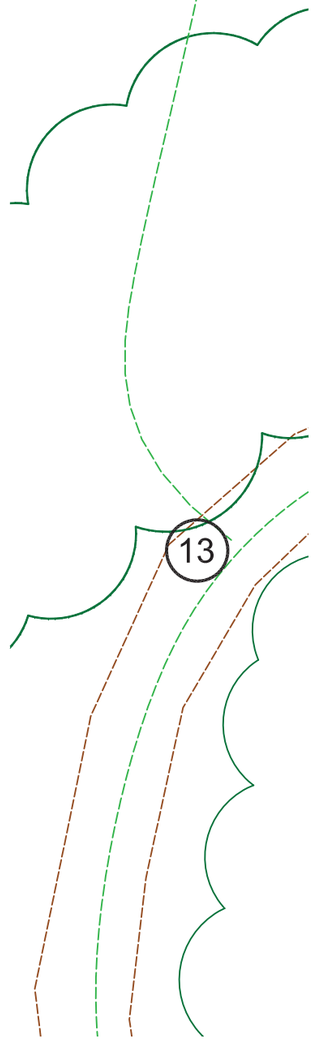
9. **Proposed ruderals test bed** : Aggregate and crushed concrete heaps presumed removed and complete area surface picked for construction debris, rubbish etc. leaving clean and mixed soil heaps in situ. Surface treatments over this area to be split into 5 types to facilitate different natural colonisation of broadly equal area which can then be studied.

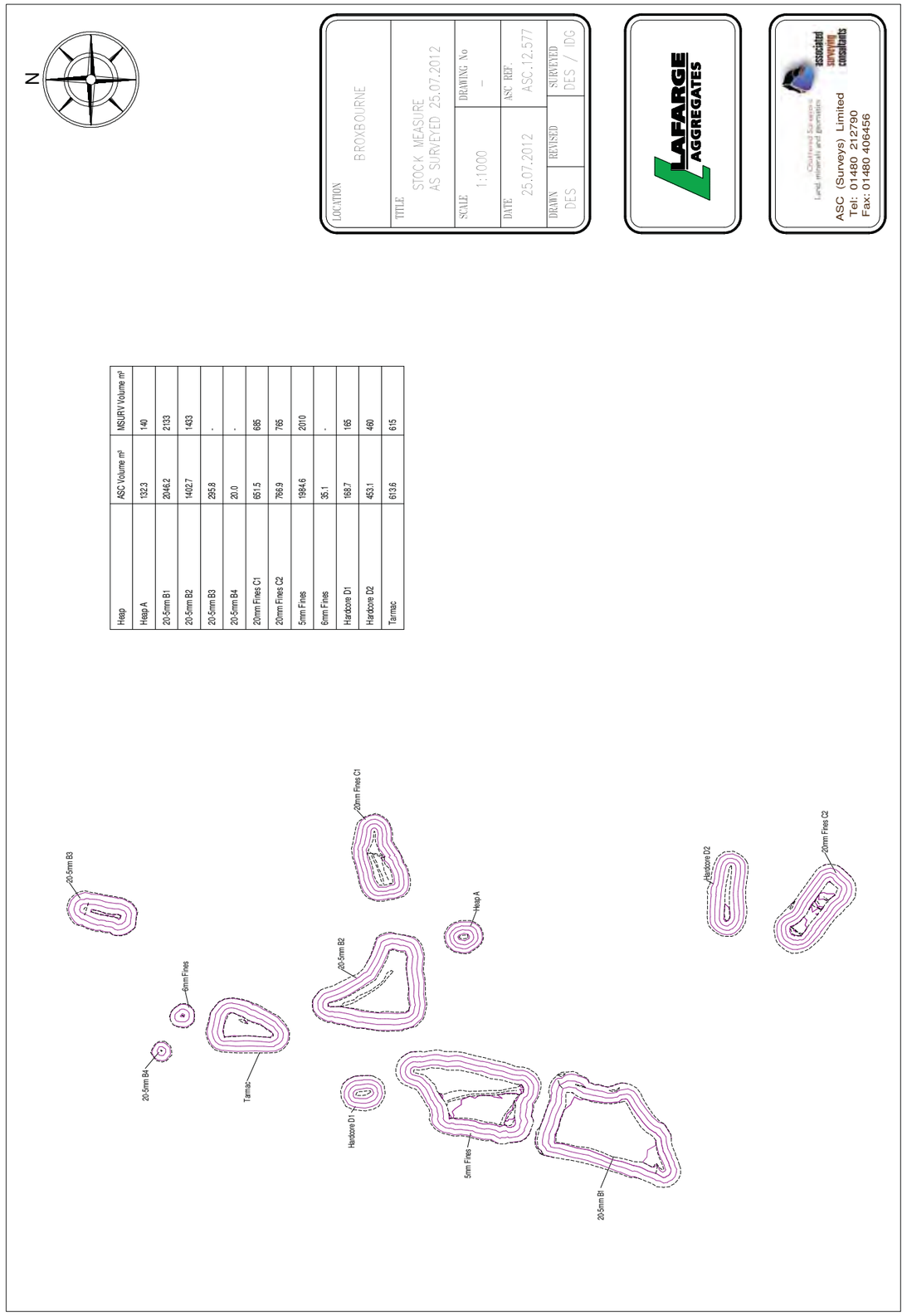
   - Type 1: Existing surface left without any reworking except removal of construction debris, rubbish and safety issues.
   - Type 2: As Type 1 with additional decompaction to 150mm by 'bucket teeth' method.
   - Type 3: As Type 1 with the addition of 100mm of selected material from mixed soil heaps 11.
   - Type 4: As Type 2 with addition of 100mm of selected material from mixed soil heaps 11.
   - Type 5: Reworking of remaining material in mixed soil heaps 11. This shall include limited shaping, regularisation of side slopes, creation of flat summits 1.5-2.0m wide. Surface stone, >100m long dimension shall be picked collected and piled in drifts on the north side of the shaped soil mounds.

   The areas shall be in simple shapes broadly as shown on the plan and set out and agreed on site by Lafarge/LUC. On completion 50x50x500mm treated softwood pegs shall be placed at 25m centres along the divisions between treatment type.

10. **Freestanding sand mountain** : review stability of steep faces/slopes. If stable do minimal works and face, otherwise rework slopes to angle of repose forming circular footprint with 5m diameter flat top.

11. **Mixed soil heaps** : remove any construction debris/rubbish. Use for blinding purposes as noted above. See note 14 for ultimate treatment.





Heap	ASC Volume m³	MSURV Volume m³
Heap A	132.3	140
20-5mm B1	2046.2	2133
20-5mm B2	1402.7	1433
20-5mm B3	295.8	-
20-5mm B4	20.0	-
20mm Fines C1	651.5	685
20mm Fines C2	768.9	765
5mm Fines	1984.6	2010
6mm Fines	35.1	-
Hardcore D1	168.7	165
Hardcore D2	453.1	460
Tarmac	613.6	615

Annex 3

Dobbs Weir and Spitalbrook: paper to LVRPA Planning Committee meeting 22April 2010 (Paper ULV/36/10)

Agenda Item 4
Paper ULV/36/10

Lee Valley Park
Open spaces and sporting places

UPPER LEE VALLEY REGENERATION AND PLANNING COMMITTEE MEETING
22 APRIL 2010

DOBBS WEIR AND SPITALBROOK

Presented by Head of Planning and Regeneration

SUMMARY

Spitalbrook is owned by the Authority having been purchased from Landholdings Ltd in 2003. The site had been the subject of gravel extraction and landfill over a long period. When the site was purchased part of it was subject to a lease to Lafarge Aggregates Ltd. Members will recall that in order to accommodate the WWCC on part of this site the Authority entered into an agreement with Lafarge Aggregates Ltd under which Lafarge gave up part of their lease on the Spitalbrook site in return for an option to extract gravel from the former Dobbs Weir caravan site and an agreement to extract gravel from an area under its existing plant. Under the agreement this option has to be taken up by 31 July 2010. The agreement provides for the Authority to receive rental income and a sum for the amount of gravel extracted.

Lafarge submitted a planning application for the extraction of minerals from the former Dobbs Weir caravan site to Hertfordshire County Council on 18th August 2009. In response to the application Herts CC has sought to require Lafarge to undertake restoration work on the whole Spitalbrook site as a Renewal of Mineral Planning Permission (RoMMP).

As a result officers have undertaken initial work on a framework to inform the enhancement scheme (Plan 1). Officers have also prepared outline ideas for how the Spitalbrook site could be enhanced if Lafarge do not obtain planning permission (Plan 2).

The Lafarge planning application for the former Dobbs Weir caravan site has given rise to concerns amongst local residents. Officers have attended meetings of the Dobbs Weir Forum to address these concerns and to clarify how the Authority's vision for the area is developing. Plans 1 and 2 were presented to the Dobbs Weir User Forum in 10th February. The Forum broadly welcomed the ideas but felt that for Plan 1 consideration should be given to the creation of a new facility at the northern end of the site to support the local visitor economy.

RECOMMENDATIONS

Members Note:	(1)	the recent development on the current mineral planning application for the extraction of sand and gravel at the site; and
Members Discuss:	(2)	the draft indicative schemes plan 1 and 2 (attached at Appendix B to this report).

BACKGROUND

1 Spitalbrook and Dobbs Weir comprise 200ha owned by the Authority. The land is bounded by Nazeing New Road in the south, the Navigation to the east and the London – Cambridge rail line to the west. A haul road which serves the existing concrete processing plant forms the northern boundary of the site.

2 The western part of the site (Spitalbrook) has been extensively worked for sand and gravel extraction in the past and has only limited restoration. The central area has been used until recently as a concrete processing plant leased to Lafarge and contains plant and open storage for aggregates. The plant will shortly be dismantled and removed from the site. The northern/eastern part was used until 2007 as the Dobbs Weir caravan site but is now vacant land, part of which is occupied by Park Guard as their local base. The south eastern side of the Spitalbrook site includes 2 lakes and is let to Carthagena Fisheries. The Spitalbrook site is not open to the public. As a result of the limited public access Spitalbrook has a wide range of habitats with a high biodiversity values.

3 Given Spitalbrook's history of mineral working Hertfordshire County Council classified the western half of the site (Spitalbrook) as a Renewal of Mineral Planning Permission (RoMMP) (see Appendix A to this report). This is a planning mechanism whereby old planning mineral permissions can be updated to bring them into line with modern standards and practices to address deficiencies in such matters as working practices, final restoration and aftercare. In the case of Spitalbrook this means that no mineral working may take place on the former Dobbs Weir caravan site until a scheme has been approved by the Mineral Planning Authority. Hertfordshire are keen for the current planning application to be linked to the restoration of the wider site.

4 In 2005 the site was identified for the Olympic White Water Canoe Centre (WWCC). The actual land area required involved parts of the land leased to Lafarge and other land in the Authority's freehold ownership. As a result, a new lease agreement was completed in December 2006 which allows Lafarge to extract minerals from the caravan site and other areas subject to the grant of panning permission. The agreement requires that all extraction is completed and the site restored by 2016. The Authority served notice on occupiers of the caravan site and closed the site in September 2007.

5 In 2007 surveys by the Olympic Delivery Authority revealed that parts of the site were contaminated which made it unsuitable for its use for the WWCC. However Lafarge were committed to the working of minerals from the site and in September 2009 applied for minerals planning permission to extract 440,000 tonnes of sand and gravel in 4 phases and restore the site involving the importation of 260,000tonnes of inert material to create an extensive wetland habitat.

6 At the Upper Lee Valley Regeneration and Planning meeting in October 2009, some Members expressed reservations on the planning application for the extraction of sand and gravel from the former caravan site (Paper ULV/28/09).

7 The application has not been determined yet by Hertfordshire County Council (HCC), the Minerals Planning Authority, which is seeking to tie delivery of the RoMMP with the current application in line with their planning policy considerations.

8 At a meeting of the Dobbs User Forum in November 2009 local residents expressed concerns over the current situation involving the closure of the camp site. They are also concerned that if planning permission for mineral extraction is granted they will be subject to a 5 year programme of additional traffic generation involving HGVs, possible water contamination, noise and disturbance. In addition they are concerned that in the event that planning permission is not granted the Authority has no alternative plans for the former caravan site and they fear it will remain disused.

PROPOSALS

9 Herts CC's designation of a large proportion of Spitalbrook as a RoMMP and their requirement that Lafarge restore a significant part of the site creates the opportunity to consider the Spitalbrook site in a more comprehensive way. In order to support this Officers have therefore developed ideas for the site applying the objectives of the draft Park Development Framework (PDF) objectives and identified a range of opportunities which the site presents. The objectives are included in a schedule in Appendix C to this report.

10 Two illustrative schemes (attached at Appendix B to this report) have been drawn up to show how these objectives could be translated on the ground. These are only illustrative schemes as the full implications of contamination on site are not yet known and in any case a final scheme will also depend on securing adequate finance.

- Plan 1 shows how the whole site including Dobbs Weir, Cathagena and Spitalbrook could be developed if the planning permission for the working of the sand and gravel was granted and the site restored. This plan assumes that the Dobbs Weir site will be laid out as a wetland habitat in line with the draft scheme included in the current Lafarge planning application. The remainder of the Spitalbrook site will have limited public access with a series of cycle and walking routes. The use of limited amounts of imported 'fill' material will be used to enhance habitats. The Carthagena site on the west side of the Navigation could provide accommodation ranging from lodges, eco-huts, camping and caravans. There would be improved public access to this area retaining recreational fishing. However, this site is not in the RoMMP area and would not be provided by Lafarge therefore its development would rely on securing external funding.

- Plan 2 (if planning permission is not granted) differs from Plan 1 in that the Dobbs Weir site is identified for a range of accommodation that would require external funding and ideas for the development of the Spitalbrook site will remain as aspirations only. In the absence of an involvement by Lafarge the scheme will not have financial support.

11 In order to help local residents understand the vision for Spitalbrook these plans were shown to a meeting of the Dobbs Weir users forum at their meeting on 10th February 2010. The proposals were broadly welcomed although in it was felt that in Plan 1 some facility should be provided at the northern end of the site to create a sense of arrival to support the local visitor economy. Ideas suggested included car park, some form of 'gateway'. It was also mentioned that routes to Amwell and the RSPB nature reserve at Rye Meads should be strengthened.

12 These schemes have been given to Lafarge and are being taken into account as the framework for their proposals for Spitalbrook is developed. If they agree to take forward a scheme for the RoMMP area they will enter into a unilateral undertaking with the Minerals Planning Authority. If Lafarge do not restore the Spitalbrook site then it could remain in its present condition until the Authority is able to review its options for the site.

ENVIRONMENTAL IMPLICATIONS

13 The development of detailed plans for restoration of the Spitalbrook will require an assessment of the contamination on the site and will involve detailed discussions with all relevant agencies to ensure that levels of contamination are known and contained.

FINANCIAL IMPLICATIONS

14 If planning permission is granted for extracting gravel from the former Dobbs Weir caravan site it is anticipated that the restoration of the Spitalbrook site will be financed by Lafarge and will be the subject of an aftercare agreement for several years. This would not include the accommodation scheme suggested in Plan 2 which would need to be progressed by the Authority subject to securing adequate funding as it is outside the RoMMP area. After the restoration and aftercare period

the revenue costs of maintaining the site and public access routes through the site will fall on the Authority. Currently the cost of maintaining Spitalbrook is in the region of £2,000 per annum until a detailed scheme is prepared and agreed the full maintenance costs will not be known.

15 If planning permission is not granted for the extraction of gravel from the former Dobbs Weir caravan site, the Authority will need to secure adequate funding to progress plans for the site.

LEGAL IMPLICATIONS

16 Planning applications referred to this Authority are submitted under the consultative arrangements of Section 14 (4-7) of the Lee Valley Regional Park Act 1966. The Act requires a local planning authority to consult with the Authority on any planning application for development, whether within the designated area of the Park or not, which might affect any part of the Park.

17 The Park Act enables the Authority to make representations to the local planning authority which they shall take into account when determining the planning application.

RISK MANAGEMENT IMPLICATIONS

18 Implementing any scheme on the Spitalbrook site will need to have regard to land contamination.

Report by Head of Planning and Regeneration

Background Papers

Planning application for sand and gravel extraction and RoMMP

Previous Committee Reports

ULV/28/09 - Planning application consultation by Hertfordshire County Council on land at Dobbs Weir for mineral working. October 2009

Appendices Attached

Appendix A Dobbs Weir RoMMP Plan
Appendix B Illustrative drawings Plans 1 and 2
Appendix C PDF Aims & Objectives Assessment

List of Abbreviations Used

RoMMP	Renewal of Mineral Planning Permission
WWCC	White Water Canoe Course
HCC	Hertfordshire County Council
PDF	Park Development Framework

Appendix A to Paper ULV/36/10

40

Hertfordshire COUNTY COUNCIL

Restoration Minerals & Waste Planning Unit
Environment Act 1995
Review of Mineral Planning Permissions

Site Number: 174

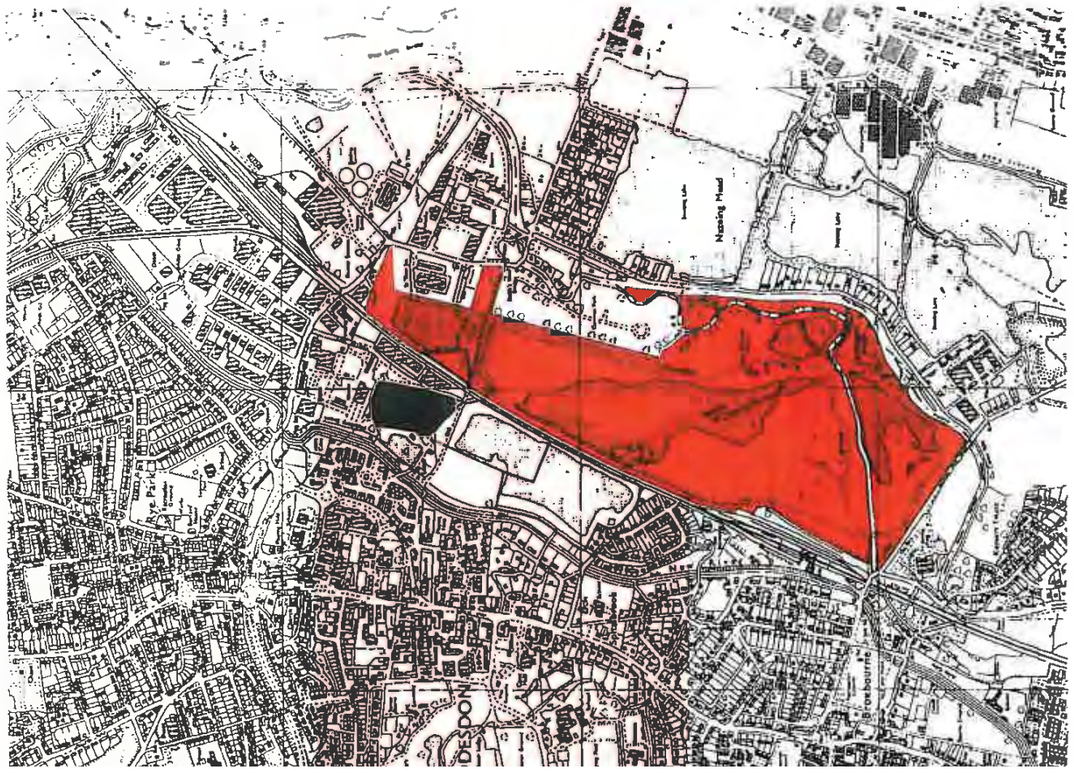
Site Name: Dobbs Weir

Planning Permissions	Date of decision
E/1538-55 Extraction Gravel	25/4/56
E/512-56 Extension to Pit	11/7/56
E/1201-56 Extraction of Gravel	28/11/56
E/1394-65 Extraction of Gravel	31/8/66
E/247a-48 Extraction of Gravel	30/3/50

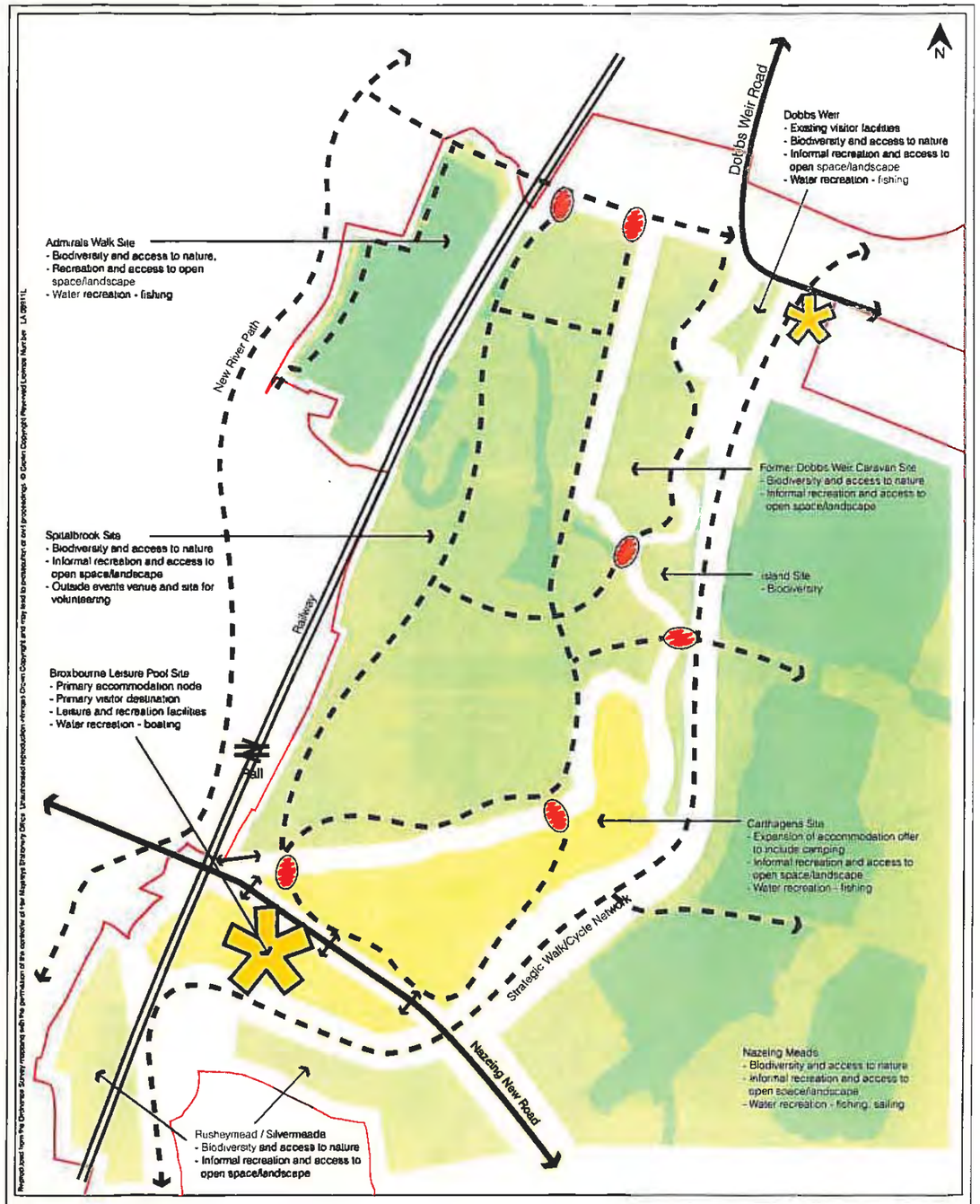
N

Scale 1:12,855

Ref: ro_174



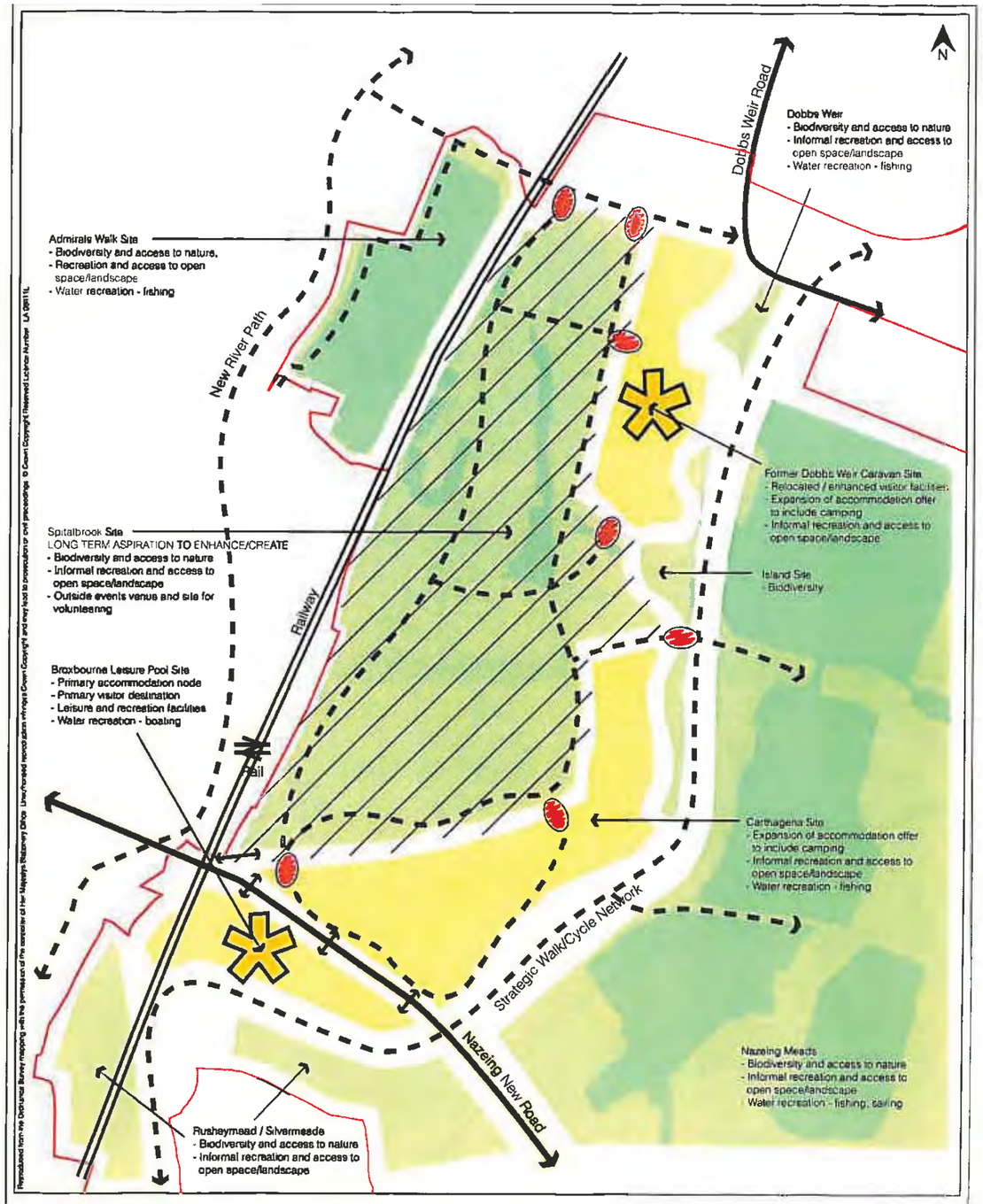
Appendix B to Paper ULV/36/10



DOBBS WEIR - BROXBOURNE
Indicative Option 1 - Dobbs Weir Nature Reserve
Scale: NTS

Legend
- LVRP Boundary
- Walk / Cycle Network
- Bridge

Lee Valley Park
Open spaces and sporting places



DOBBS WEIR - BROXBOURNE
Indicative Option 2 - Dobbs Weir Visitor Node
Scale: NTS

Legend
- LVRP Boundary
- Walk / Cycle Network
- Bridge
- Long term aspiration to restore/enhance the Spitalbrook site subject to further investigation

Lee Valley Park
Open spaces and sporting places

Park Development Framework Aims and Objectives Assessment

The table below provides a simple framework for assessing general site development opportunities or specific development proposals against the aims and objectives of the PDF. For any specific site or proposal an evaluation can be made as to the extent that we would want to see each of the identified objectives delivered, or (in the case of a specific proposal) the extent to which each of the identified objectives would be delivered.

Site Name: Dobbs Weir – Spitalbrook

Table 1 Summary of PDF Aims and Objectives

Aim and objective	Relative priority of objective			Comments
	Primary	Secondary	N/A	
Visitors				
Identity and brand		X		Improved identity and presence of the site as a component part of the Park.
Access to the Park		X		Access to the Site from the South; • Access from Broxbourne Leisure Pool site across Nazeing New Road. • Route from Broxbourne Station using existing ramp. Access to the Site from the North; • Dobbs Weir to the NE. • Admirals Walk to the NW. Access to the Site from the East; • Possible new bridge crossing over R. Lee Navigation and R. Lea.
Routes	X			Provide a network of circular routes comprising; • Retain existing crossing points and improve access from Carthagena Fisheries. • Two north-south routes (an eastern route and a western route. • Additional east-west links (to form range of 'circular routes'. • Route around east side of Carthagena Lake. • Possible new bridge crossing over R. Lynch to NW. • Possible new bridge crossing to link into Dobbs Weir Site.
Visitor Facilities		X		Visitor Nodes at; • Broxbourne Leisure Pool to the South. • Dobbs Weir to the North Site focused secondary visitor infrastructure e.g. paths, signage, furniture etc.
Accommodation	X			Potential expansion of future accommodation uses (currently unknown) from Broxbourne Leisure Pool site into land south of River Lea to include wild camping.

Aim and objective	Relative priority of objective			Comments
	Primary	Secondary	N/A	
Sport and Recreation				
Recreation and Leisure	X			Informal recreation including; • Walking/running/cycling. • Access to open space Formal recreation including; • Fishing (existing) and potential expansion into the site and on R. Lea. • Possible formal cycling offer e.g. mountain bike trail. • Potential for flat water canoe trail using the R. Lea and Navigation linking Dobbs Weir to Broxbourne. Designated portage areas required for easy access along route. • Potential expansion of future recreational uses (currently unknown) from Broxbourne Leisure Pool site into land south of River Lea
Sport		X		Possible development of recreation infrastructure described above into sports facilities (considered at this time to be unlikely)
Sports development		X		Scope dependant on delivery of node at Broxbourne Leisure Pool and possibilities of fishing academy/canoe academy.
Biodiversity				
Fauna and Flora	X			Existing values are important. Protected species and scale of existing habitats. Issues with clean cover proposal and impacts on biodiversity value. Potential for addressing issues with invasive species and grassland creation.
Access to nature	X			PDF identified opportunity area for Site of Special Biodiversity Interest. Water Vole sanctuary on Dobbs Weir. Potential for hides/screens/ interpretation elsewhere.
Social and Community				
Health		X		Recreation infrastructure and improved access.
Arts		X		Consider integration of arts into the plans e.g. land art? Performance arts could be delivered by events space.
Events	X	X		Potential flexible outdoor events space of significant scale, large open grass to the south of the main site (adaptable i.e. can be enlarged by mowing). Good access from public transport node and road network. Potential for on site car parking.
Learning		X		Component part of the scheme and future site management.
Volunteering		X		Component part of the scheme and future site management.

Aim and objective	Relative priority of objective			Comments
	Primary	Secondary	N/A	
Landscape and Heritage				
Landscape	X			Large open space with good mix of landscape types. Increased accessibility to landscape types/varieties. Mitigate northern edge screening of industrial area.
Heritage	X	X		Potential for development of visitor and/or recreational infrastructure to relate to historic use for gravel extraction e.g. Emscher Park (German post industrial park).
Environmental Infrastructure				
Water		X		Increased flood storage associated with Dobbs Weir site. Potential for natural systems (reed beds) to treat surface water.
Energy		X		Potential micro generation using water for site processes (e.g. providing power to pumps to control water levels).
Production		X		Gravel extraction associated with Dobbs Weir site. Small scale woodland/scrub biomass.
Waste		X		Short term benefits associated with remediation; • Potential for importing clean fill and diverting it from landfill. • Potential for importing recycled green waste.
Land contamination	X			Restoration of site.