

North London Waste Authority
Eco-Park at Pinkham Way
Scoping Report

124572-61

Issue | March 2011

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 124572-61

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Glossary and Abbreviations

AD	Anaerobic Digestion - This treatment uses bacteria to break down organic material without the oxygen present.
ADMS	Atmospheric Dispersion Modelling System-Urban pollution model
AGL	Above Ground level
AOD	Above Ordnance Datum
BS	British Standard
C&I	Commercial and Industrial Waste
DEFRA	Department for the Environment, Food and Rural Affairs
DETR	Department for Environment Transport and the Regions
DMRB	Design Manual for Roads and Bridges
EA	Environment Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
FRA	Flood Risk Assessment
GLA	Greater London Authority
GLAAS	Greater London Archaeological Advisory Service
IEEM	Institute of Ecology and Environmental Management
LBB	London Borough of Barnet
LBE	London Borough of Enfield
LBH	London Borough of Haringey
LNR	Local Nature Reserve
MBT	Mechanical and Biological Treatment
MoL	Metropolitan Open Land
NSCA	National Society for Clean Air
MSW	Municipal Solid Waste
NLWA	North London Waste Authority
NO ₂	Nitrogen Dioxide
NTS	Non-Technical Summary
PM _{2.5}	Particulate Matter - particles less than 2.5 micrometers in aerodynamic diameter.
PM ₁₀	Particulate Matter - particles of 10 micrometers or less
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
PTAL	Public Transport Accessibility Level
RTD	River Terrace Deposits
SAC	Special Area of Conservation
SINC	Site of Importance for Nature Conservation
SPA	Special Protection Area
SPG	Supplementary Planning Guidance
SPZ	Source Protection Zone
SSFRA	Site Specific Flood Risk Assessment
SUDS	Sustainable Urban Drainage Systems
TA	Transport Assessment
TFL	Transport for London
TLRN	Transport for London Road Network

UDP

Unitary Development Plan

1 Introduction

1.1 Eco-Park at Pinkham Way

This Environmental Scoping Report has been prepared in connection with a proposed outline planning application for an Eco-Park at Pinkham Way in North London. The Eco-Park comprises a proposed resource management facility for the North London Waste Authority (NLWA) and a Vehicle Depot for the London Borough of Barnet. The proposed development is located on the site of the former Friern Barnet Sewage Works site, adjacent to the A406 Pinkham Way. The site is owned by the North London Waste Authority and the London Borough of Barnet (LBB) and falls within the planning jurisdiction of the London Borough of Haringey (LBH).

The resource management facility is proposed to be a key constituent of North London's municipal waste infrastructure, being one of a number of proposed waste facilities for handling the bulk of the area's refuse. The site will also accommodate a separate vehicle depot and storage facility for LBB waste collection and street management services.

1.2 Need for EIA

The Pinkham Way waste facility proposals fall into Schedule 2 [Part 11b] of the Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008 (referred to in this report as the 'EIA Regulations'), falling under:

'Installations for the disposal of waste (unless included in Schedule 1).....[where] the area of the development exceeds 0.5 hectare'

1.3 Scoping Report

The purpose of this report is to support a request for a Scoping Opinion under Section 10 of the EIA Regulations, in respect of the proposed Eco-Park at Pinkham Way.

This report provides information on the proposed development and consideration of the potential for significant environmental effects during its construction and operation. It sets out the proposed scope of the EIA, including surveys or data gathering to be carried out as part of the baseline assessment and the approach to be taken in conducting the assessment and identifying mitigation measures.

As required in the EIA Regulations, this scoping request includes the following information:

- *"A plan sufficient to identify the land;*
- *A brief description of the nature and purpose of the development and of its possible effects on the environment; and*
- *Such other information or representations as the person making the request may wish to provide or make".*

In Section 1.4, general information is given about the site and its existing condition, with Figure 1 showing the red-line boundary of the site. There follows a description of the proposed development (Section 1.5) and an explanation of the overall methodology for the environmental assessment (Section 2.1). The individual topic specific issues are discussed in Section 3, with a brief discussion of the potential environmental effects of the scheme.

1.4 Site and Surroundings

The Pinkham Way site is a 16.33 acre / 6.6ha site in Friern Barnet, owned by LBB and NLWA and lying within the planning authority area of the LBH. NLWA owns 4.77 hectares comprising the northern part of the site; and LBB owns 1.83 hectares comprising the southern part of the site. The site is the former location of the Friern Barnet Sewage Works.

Figure 1 below, shows the location and red-line boundary of the application site. The site is located to the immediate south of Pinkham Way, which forms part of the North Circular Road (A406). The East Coast Mainline railway line, which runs into and out of Kings Cross Station forms the eastern boundary of the site. To the south of the site lies Muswell Hill Golf Club. To the west of the site lies Hollickwood Park recreational area; and beyond that an area of residential development.

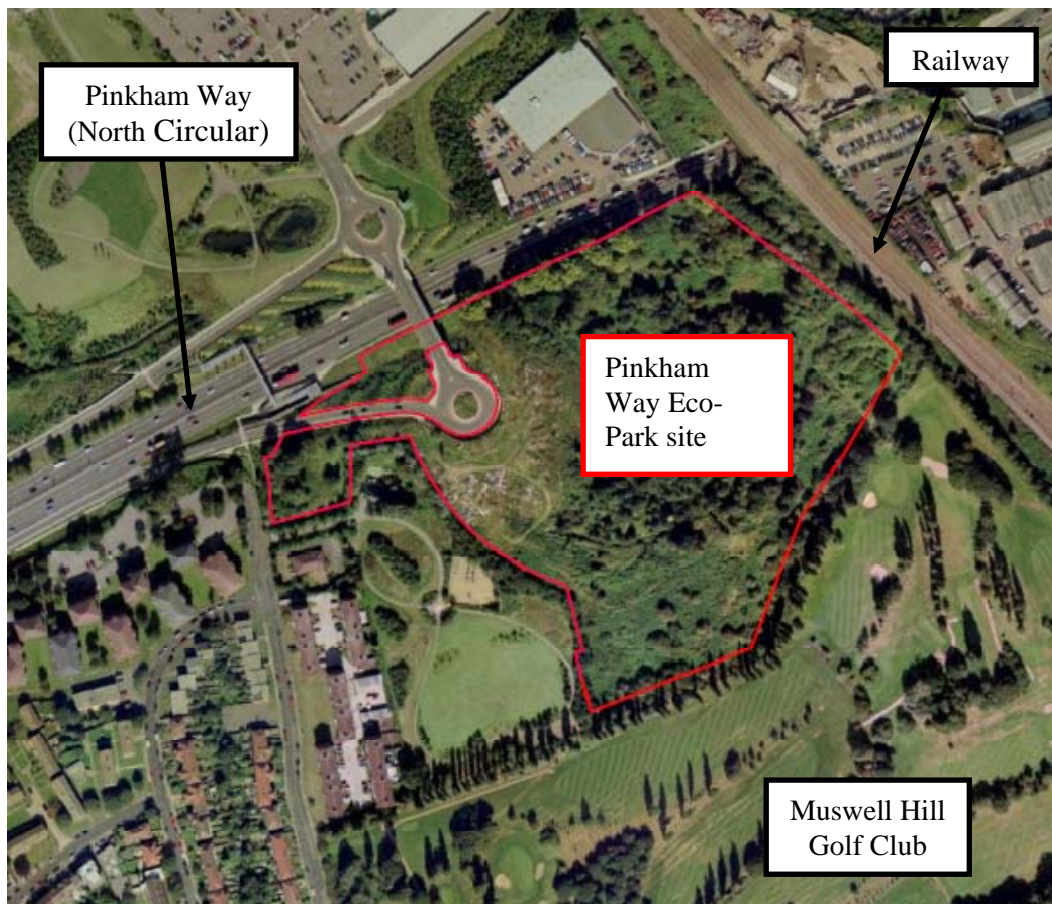


Figure 1: Location and red-line boundary of the Pinkham Way site

The site is currently a derelict plot of land covered in scrub vegetation, trees and grassland.

Within the north-western part of the proposed site, lies a dumbbell road junction allowing access and egress from the North Circular Road to the Friern Barnet Retail Park located to the north of Pinkham Way.

Access to the site is currently restricted by palisade fencing that runs around the perimeter. The only access points to the site are via a locked gate located on Pinkham Way, close to the railway bridge or via a locked gate at the roundabout on Pegasus Way.

The existing levels within the site vary considerably; with a difference of up to 15 metres from one side to the other. The highest parts of the site are found to the south and west (approximately 49.5m AOD) and the lowest close to the A406 (approximately 34.5m AOD).

1.5 Description of the Development

The North London Waste Authority (NLWA) and the London Borough of Barnet (LBB) propose the redevelopment of former Friern Barnet Sewage Treatment Works site as an Eco-Park. Drawing SK 14 005 in Appendix A shows the proposed development zones.

The proposed development will comprise the following elements:

- A resource management facility in the north of the site, of up to 15,230 sq.m. floorspace (excluding associated plant, vessels and external storage areas). The facility would have the capacity to accept up to 300,000 tonnes of waste per annum for processing and management including separation of mixed recyclable materials for future use and creation of solid recovered fuel for use elsewhere;
- Offices and welfare facilities (showers, toilets, changing areas, locker areas) to support site operations;
- An education/visitors centre that can be used to increase awareness of sustainable resources and management as well as potentially linking to promoting the site's ecological value;;
- A vehicle depot for LBB would be located in the south of the site. This will act as a base for the council's refuse, street cleansing and recycling vehicles, and passenger transport minibuses;
- Areas of open space and land designed to provide ecological mitigation and landscape screening will be located around the edge of the site;
- An access road will lead from the existing roundabout on Pegasus Way, in to the site;
- Vehicle and cycle parking for staff and visitors; and
- Ancillary works including earthworks and retaining structures, drainage and utilities infrastructure, fencing, lighting, weighbridges and control cabins.

The resource management facility and education centre will be developed on land owned by the NLWA in the north of the site, and the vehicle depot will be developed on land owned by the LBB in the south of the site.

Development Zones

The proposal divides the scheme into a number of development zones which define the different uses of the site and the maximum amount of development in each part of the site. Drawing 005 in Appendix A shows the development zones. Table 1 provides details of the proposed uses within each zone and the maximum floorspace that is proposed in each zone.

Table 1: Proposed Development Zone Uses and Floorspace

Development Zone	Development Zone area (m ²)	Use(s)	Owner / User	Maximum Floorspace (m ² gross external area)*
A	Total of Zone A = 27,800	Resource Management Facility*	NLWA	14,500
		Offices and visitor/education centre	NLWA	680
B	4,142	Access road, weighbridge and control cabins	NLWA / LBB	50
C	Total of Zones C, D and E = 9,861	Offices, storage and welfare facilities for depot staff	LBB	660
D		Refuelling facility canopy area	LBB	280
E		Parking and circulation	LBB	none
	24,197	Ecological and landscaping areas	NLWA / LBB	none
	1,090	Undercroft area	NLWA	none
Total	66,000***			15,890**

* Excludes plant and machinery associated with operation of the site.

** Excludes refuelling facility canopy area

*** Excludes an area of flood storage under the waste handling facility that can be designed to create new ecological habitat on site

Parameters

Ground Levels

A range of ground levels are proposed across the site. Table 2 details the maximum ground levels AOD. A development platform level of 42.5m AOD is proposed across much of development zone A, with the south western and western parts of this zone providing a transition between the site access road and the development plant. The levels in this transition area will range from 42.5m AOD to 47.5m AOD. The site access road will generally slope down from 46m AOD at the site entrance to 42.5m AOD. Ground levels in development zones C-E will vary from 42.5m AOD at the depot entrance to 45m AOD at the site exit, with a maximum level of 47.3m AOD.

Table 2: Proposed Development Parameters – Ground Levels

Development Zone		Maximum Ground Level (metres AOD)
A	Resource Management Facility	42.5m
	Offices and visitor/education centre	45.5m
	Western embankment	47.5m
B	Access road, weighbridge and control cabins	47.5m
C	Offices, storage and welfare facilities for depot staff	47.3m
D	Refuelling facility canopy area	
E	Parking and circulation	

A combination of earth bunds and retaining walls are proposed across the site to support the development zones. The levels strategy has sought to maximise the sustainability of the scheme, by creating development platforms that reuse material on-site, rather than exporting material to landfill which would generate significant transport movements with associated noise, dust and congestion.

Building Dimensions

Table 3 shows the maximum building heights for each development zone where buildings and/or plant are proposed.

Table 3: Proposed Development Parameters – Building Heights

Zone		Maximum Building Height (metres AGL)
A	Resource Management Facility - Building	23.0m
	Resource Management Facility - Vessels	23.0m
	Resource Management Facility - Plant	7.0m
	Offices and visitor/education centre	14.0m
B	Weighbridge and control cabins	3.5m
C	Offices, storage and welfare facilities for depot staff	8.0
D	Refuelling facility canopy area	6.5m
E	Parking and circulation	n/a

Table 4 provides information in respect of the maximum length and width of buildings in each development zone where buildings are proposed.

Table 4: Proposed Development Parameters –Building Sizes

Development Zone		Maximum Building Width (metres)	Maximum Building Length (metres)
A	Resource Management Facility -Building	135.0m	168.0m
	Resource Management Facility - Vessels	n/a	n/a
	Resource Management Facility - Plant	n/a	n/a
	Offices and visitor/education centre	16.0m	40.0m
B	Weighbridge	4.5m	12.0m
	Control cabins	4.0m	5.0m
C	Offices, storage and welfare facilities for depot staff	17	30
D	Refuelling facility canopy area	12.5	45.5
E	Parking and circulation	n/a	n/a

A resource management facility comprises a number of components where different waste management processes are undertaken. As such the building heights shown in Table 3 make allowance for all parts of the process, and it should be noted that whilst it is anticipated that the majority of the works will be enclosed within a building structure, not all of that area would be at up to 23m Above Ground level (AGL).

It should be noted that a stack associated with efficient and effective odour control could extend to 24m AGL. If a stack is required, it will be a separate structure, and will need to be a minimum of 1m above the roofline of the resource management facility, and will be located within Development Zone A. To minimise the impact of any stack the NLWA would recommend that it be situated so that the building form encloses the lower part of the structure.

Parking Schedule

Table 5 sets out the proposed parking for the development.

Table 5: Proposed Parking Schedule

Vehicle Type	NLWA (Zone A)	LBB (Zone D)
Refuse and recycling vehicles	None	84
Other operational vehicles	10	11
Cars/Vans	40	45
Disabled	2	2
Motorcycles	3	2
Coaches	2	0
Bicycles	32	36

Operating Hours

Resource Management Facility

The waste facility will operate continuously, as waste management (e.g. anaerobic digestion) is not turned on and off. However, it is expected that activities associated with the sorting and handling of waste would be undertaken between the hours of 0600 and 2200, with overnight activities associated with site monitoring and maintenance only.

Collections from and deliveries to the facility will be generally restricted to 0700 – 1900, Monday to Friday.

Evening / night time deliveries will be limited to street sweepers and a small number of Refuse Collection Vehicles (RCVs) dropping off street cleansing wastes;

Collections from the site will normally be carried out Monday to Friday, unless exceptional circumstances necessitate the need for additional working. This is considered to be unlikely.

LBB Depot

The utilisation of the depot would be approximately 0000 - 2400 Monday to Friday, 0600 - 2400 on Saturdays and 0700 - 2400 on Sundays.

2 EIA Scope and Methodology

2.1 General Approach to EIA

The EIA is proposed to be carried out in four stages, as follows:

- Phase One: Scoping and consultation
- Phase Two: Baseline data gathering and consultation
- Phase Three: Impact assessment and identification of mitigation measures
- Phase Four: Preparation of Environmental Statement (ES) and Non Technical Summary (NTS)

Some baseline data gathering has been undertaken during the preparation of the Scoping Report, in order to identify the likely significant effects of the scheme. The scope of further environmental assessment will be clarified through discussion with the LBH and other statutory consultees, based on this report. The ES will be prepared in accordance with the requirements of the EIA Regulations. In addition, the following guidance will be taken into account:

- Department for the Environment Transport and the Regions (DETR) Circular 02/99 Environmental Impact Assessment;
- Amended Circular on Environmental Impact Assessment (consultation paper, June 2006);
- Environmental Impact Assessment: A guide to good practice and procedures (consultation paper, June 2006);
- Policies and guidance relevant to the environmental topics being assessed; and
- LBH Sustainable Design and Construction guidance.

In accordance with Part 1 of Schedule 4 of the EIA Regulations, difficulties encountered during assessment work and limitations and assumptions used for individual assessment areas will be set out in the ES.

Consultation with statutory and key non-statutory bodies will be taking place during the course of the EIA. Consultation will continue through the baseline data gathering and assessment phases.

The following topics have been scoped out of the EIA on the basis that there is not considered to be a likely significant impact, given the nature, scale and location of the proposed depot:

- Archaeology
- Daylight / Sunlight
- Environmental Wind
- Socio-Economic Effects

An explanation of why these topics have been scoped out is provided in Section 2.2.

It is considered that the following topics should be assessed in the Environmental Statement:

- Air Quality
- Contaminated Land
- Ecology
- Landscape and Visual Effects
- Noise
- Transport
- Waste
- Water Resources, Drainage and Flood Risk

For each topic, the likelihood of significant effects arising will be considered in terms of:

- Direct and indirect effects during construction
- Direct and indirect effects during operation
- Where relevant, cumulative effects arising from the proposed development with other development that has extant planning permission or is under construction.

Consideration of Alternatives

The EIA will include a description of the main alternatives assessed and the main reasons for choosing the proposed development, taking into account the environmental effects of the proposed alternatives.

2.2 Topics Scoped Out

2.2.1 Archaeology

Arup has reviewed the scope of the proposed works in relation to the archaeological interest of the site. To achieve this, a review of the Greater London Sites and Monuments Record (received 13 August 2009) has been undertaken. Only five records exist for a 500m radius around the proposed development site; three of the records relate to landfill. The lack of known sites and features suggests an overall low potential for archaeological discoveries.

A review of nearby desk-based work by other consultants included a review of a site that lay on the eastern side of the Great Northern Railway, which reported that geotechnical works had revealed made ground varying in thickness between 0.4 - 1.8 metres, overlying London Clay.

The Envirocheck report obtained for the project (Landmark Information Group Service, 19/08/09, 28662757_1_1) illustrates a narrow band of river terrace

deposits aligned on Bounds Green Brook, although other sources state that a narrow band of Brickearth lines the Brook. The brook is visible on the first edition Ordnance Survey map (1881), but by the 1930s it appears to have been culverted beneath Pinkham Way. The archaeological potential of such deposits is acknowledged, however, the construction of the road and culverting of the brook is likely to have truncated any features or remains.

Cary's map of 1786 shows the line of Bounds Green Brook and Bounds Green Road. The site was undeveloped agricultural land until the Friern Barnet sewage works began construction in the late 19th century. The sewage works expanded over approximately the next 60 years and occupied virtually the whole footprint of the proposed site. The OS plan of 1951-2 demonstrates the level of ground disturbance across the site. In addition, allotment gardens are shown in the western corner of the site which may have affected any shallow archaeological deposits which may have existed.

On the basis of this evidence it is proposed to scope out the need for archaeological assessment as part of this scheme.

There are no listed buildings within a 500m radius of the site. Should there be any potential for the impact on the setting of historic buildings, it is proposed that this be addressed through the landscape and visual assessment work.

These conclusions were presented to the Greater London Archaeology Advisory Service (GLAAS) of English Heritage (letter dated 26th August 2009) and a response was received from GLAAS (letter dated 15th September 2009 (see Appendix B)) agreeing that archaeological works do not need to be undertaken.

2.2.2 Daylight/Sunlight

Arup has reviewed the scope of the proposed works in relation to Daylight and Sunlight effects of the proposed works.

Daylight and Sunlight availability for existing properties is checked using the method set out in the BRE document BR209 "*Site layout planning for daylight and sunlight: a guide to good practice*".

It recommends that a simple geometrical check is carried out on the proposed development to ascertain if any part of the development subtends an angle greater than 25⁰. If this angle is exceeded then the proposed new development will cause an obstruction, which may reduce the availability of daylight and sunlight, where the obstruction is continuous.

In order to test this, a reverse analysis was carried out. Dwellings and other buildings likely to expect to receive good daylight were identified to the east and west sides of the site.

From a notional window a point was selected on each elevation at 2.0m above ground level.

[For the purposes of this exercise a flat site was assumed] From these points a line was extended, at an angle of 25⁰ from the horizontal, across the site.

Points on the ground for various fixed heights were located and contour lines were drawn. See below.

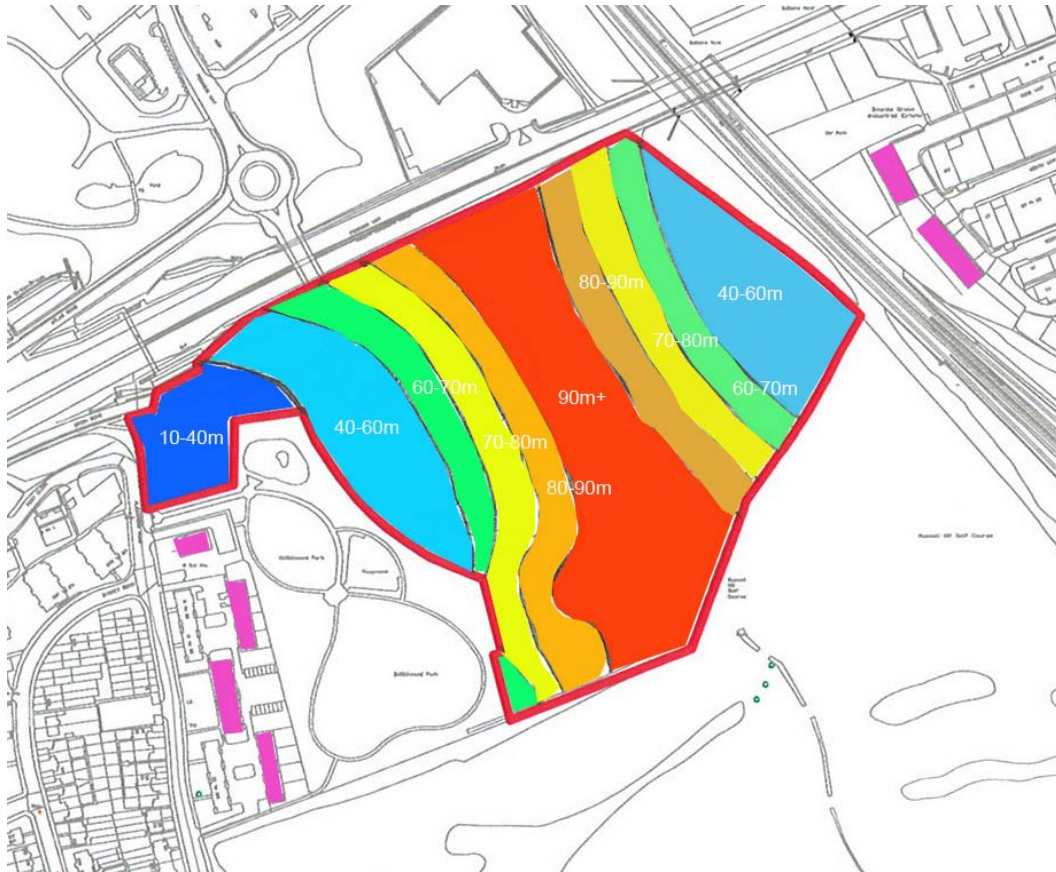


Figure 2: Geometrical check for daylight/sunlight availability

From this analysis it can be seen that for a level site building heights up to 40m will allow good daylighting for the highlighted properties.

With the proposed development to the north of the site and the properties to the east and west of the site the impact on sunlight will also be minimal.

As a result of this simple analysis and the maximum heights of the buildings being below 40m it is concluded that there is no reason to carry out a detailed Daylight and Sunlight analysis.

Light Pollution

The area to be developed is at present unlit and represents a “dark” area in the locality. The site will operate on a 24 hour basis and hence there will be significant times when the site is operating under artificial lighting. To reduce the impact of the site and building lighting on the environment an “External lighting strategy to reduce the impact of light pollution” will need to be produced in conjunction with the design work. Any environmental effects of light pollution will be dealt with in the Landscape and Visual chapter of the ES.

2.2.3 Socio-Economic Effects

The facility will generate employment opportunities for the local community, but employment numbers will be small and this is not expected to have a significant impact on the local community. The proposed development is also unlikely to impact upon local service provision such as schools or hospitals.

Impacts on the local community in terms of environmental effects will be dealt with in the noise section (3.5), the air quality section (3.1) and transport section (3.6).

The employment benefits of the scheme will be identified in the Planning Design and Access Statement.

It was concluded that socio-economic effects would not need to be further assessed within the EIA.

2.2.4 Environmental Wind

Due to the absence of public access to the development, and the lack of existing development in close proximity to the proposed buildings, it is considered that environmental wind will not result in any significant effects and will therefore not need to be assessed further within the EIA.

3 Assessment Topics

The following sections set out the potential environmental issues associated with the project and the proposed scope and methodology for the assessments.

3.1 Air Quality

3.1.1 Existing Conditions and Likely Significant Effects

This section reviews the likely significant air quality effects resulting from the proposed scheme, to identify which aspects should be investigated to establish if/how the air quality in the surrounding area will be affected by the proposed development.

Baseline

The proposed scheme is located in the LBH, bordering the LBB to the north and west and with the London Borough of Enfield (LBE) lying a short distance to the north-east. All three Boroughs are designated Air Quality Management Areas, due to concentrations of annual mean nitrogen dioxide (NO₂) and daily mean particulate matter (as PM₁₀ and PM_{2.5}) concentrations breaching air quality objectives included within the Air Quality Strategy for England, Scotland, Wales and Northern Ireland.

Baseline data will be collated by assembling and reviewing existing air quality data to gain a thorough understanding of ambient air quality in the vicinity of the proposed development (approximately 2km radius). Such data will be collated from:

- London Borough of Haringey air quality review and assessment documents;
- London Borough of Barnet air quality review and assessment documents;
- London Borough of Enfield air quality review and assessment documents;
- National Air Quality Archive;
- London Air Quality Network; and
- Environment Agency.

Consultation

An initial consultation with the local Environmental Health Officers has been undertaken to inform this scoping chapter.

Consultation with the Environmental Health Departments at the London Boroughs of Haringey, Barnet and Enfield will be undertaken with the aim of agreeing the assessment approach for the air quality assessment.

Potential issues

The proposed development area is located within LBH's Air Quality Management Area and in close vicinity to the LBB's Air Quality Management Area and the London Borough of Enfield's Air Quality Management Area. There are potential

issues with elevated background levels of nitrogen dioxide and particulate matter in the area. Therefore it is recognised that the location is sensitive in terms of air quality.

Construction

Atmospheric emissions from construction activities will depend on a combination of the potential for emission (the type of activities) and the effectiveness of control measures. In general, there are two sources of emissions that will need to be controlled to minimise the potential for adverse environmental effects:

- Exhaust emissions from site plant, equipment and vehicles; and
- Fugitive dust emissions from site activities.

The closest dust sensitive properties are the residential properties approximately 150m to the west of the site.

Operation

As a waste handling and treatment facility, the site has the potential to generate odour. With residential development within approximately 150m of the site perimeter, any odour generated might then, in turn, give rise to odour nuisance.

The site has potential to generate significant amounts of traffic (refuse and recycling vehicles, staff vehicles, street cleansing vehicles). There is therefore potential for exhaust emissions to have a detrimental impact on local air quality.

3.1.2 Proposed Assessment Methodology

Construction

The assessment of construction effects will involve a review of the proposed construction works and construction traffic data during the various phases of the development to identify any potentially adverse effects at nearby sensitive receptors. The assessment will follow the risk-based approach detailed in the Greater London Authority (GLA) Best Practice Guidance, to inform the appropriate level of mitigation required during construction.

Operation

The approach to the assessment of effects during the operation of the development will consider the changes in traffic flows on local roads and will examine the associated effects on any of the nearby Air Quality Management Areas. The extent of the assessment of the traffic related air quality effects will be determined by the extent of the Transport Assessment as agreed with the relevant bodies. It is anticipated that this will cover the local road network and any roads predicted to experience changes (as a result of the proposed development) that meet the criteria detailed in the Design Manual for Roads and Bridges (DMRB) (Volume 11, Section 3, Part 1, May 2007). Emissions from the proposed activities related to the anaerobic digestion and associated electricity and heat generation will also be considered.

The assessment of operational effects will be undertaken for the pollutants nitrogen dioxide and particulate matter (key pollutants of concern in the area) using an appropriate air dispersion model such as ADMS-Roads. It will be

established whether there are other process related pollutants to be included in the detailed assessment. The model will be set up for the baseline year, nominally 2008; to be confirmed when traffic data are collated, and verified with reference to local air quality monitoring data. The modelling assessment will compare the 'Do-Minimum' (i.e. without the proposed development) with the 'Do-Something' situation. The model will be used to derive the appropriate parameters for comparison with relevant air quality objectives and limit values in the baseline year and for the proposed year of opening of the development. The significance of effects will be assessed using the approach outlined in National Society for Clean Air (now known as UK Environment Protection) guidance.

In addition to the assessment of relevant pollutants covered in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland, an assessment of odour generated during the operation of the proposed scheme will be undertaken using a risk based approach following the principles described in the Environment Agency's draft guidance on odour. In addition an Odour Dispersion Modelling exercise will also be undertaken. This will identify potential odour sources in the operational processes, evaluate whether mitigation measures built into the process design would be sufficient to avoid odour nuisance at sensitive receptors and identify additional mitigation measures where appropriate.

The air quality assessment will be in accordance with all relevant guidance from the Department for Environment, Food and Rural Affairs (Defra) and National Society for Clean Air (NSCA) regarding air quality and development planning.

Relevant guidance and legislation

The air quality assessment will consider the following policies and guidance:

- The Air Quality (England) Regulations 2000 Statutory Instrument 2000 No. 928 (as amended);
- Air Quality Strategy for England, Scotland, Wales and Northern Ireland, July 2007 (Cmd paper No 7169);
- Planning Policy Statement 23: Planning and Pollution Control (2004);
- Air Quality Strategy for London (2010);
- The London Plan: Spatial Development Strategy for Greater London (2008);
- The Draft Replacement London Plan (2009)
- London Borough of Haringey Air Quality Action Plan 2010 - 2018;
- London Borough of Haringey Supplementary Planning Guidance (SPG) 8i Air Quality (2003);
- London Borough of Barnet Air Quality Action Plan Progress Report (2008);
- London Borough of Enfield Air Quality Action Plan (Progress Report 2008);
- Local Air Quality Management Policy Guidance LAQM.PG(09);
- Local Air Quality Management – Technical Guidance LAQM.TG(09);

- NSCA (UK Environment Protection) Guidance – Development Control: Planning for Air Quality;
- Greater London Authority Best Practice Guide: The control of dust and emissions from construction and demolition; and
- Horizontal Guidance H4 – Odour Management, Consultation Draft, Environment Agency, June 2009.

3.2 Contaminated Land

3.2.1 Existing Conditions and Likely Significant Environmental Effects

Data Sources

The site setting and ground conditions have been determined from a site specific Landmark Envirocheck Report (Landmark Information Group Service, 19/08/09, 28662757_1_1) which includes historical ordnance survey (OS) maps and environmental data reports. In addition, Arup has reviewed the historical ground investigation reports by Jacobs Engineering (UK) Ltd (Jacobs) (*Land Quality Assessment (Phase I and Phase II) Environmental and Geotechnical Site Investigation Reports*) and a summary of these two reports by Entec.

Ground Conditions

Jacobs reported that Made Ground of various thicknesses is present across the majority of the site. The thickest layer of Made Ground identified by the Jacobs ground investigation was 10.3m thick in the south eastern area of the site. The Made Ground was found to be highly variable in nature, comprising a range of materials such as bricks, wood, glass, glass bottles, metal, ash, clinker, paving slabs, asphalt, ceramics and paper. Concrete obstructions were encountered during the Jacobs ground investigation in the northern area of the site. Jacobs reported that there is a potential for perched water to be present within the Made Ground. In addition they identify that a culverted water course intersects the centre of the site, draining the golf course to the south and connecting to the historical Bounds Green Brook which is culverted beneath Pinkham Way.

Across most of the site the Made Ground is underlain by London Clay which is defined as unproductive strata of negligible permeability by the Environment Agency (EA). A small section of the site along the northern boundary is underlain by the River Terrace Deposits (RTD) which is defined by the EA as a secondary aquifer of variable permeability. The RTD may have been deposited by Bounds Green Brook which is no longer shown on OS maps but existed in this location. The London Clay in turn is underlain by the Upnor, Woolwich and Reading Formations, Thanet Sands and Upper Chalk. The site is not located in a source protection zone (SPZ) for potable drinking water.

Site History

The site formerly comprised undeveloped greenfield land prior to the development of the Friern Barnet Urban District sewage works in the late 19th century. The sewage works expanded in later years to cover the majority of the site with filter beds, tanks, sludge drying beds, associated buildings and

infrastructure and a refuse heap. The 1951 – 1952 OS map indicates that the western corner of the site comprised of allotment gardens during the operation of the sewage works. Two historical on-site landfills are recorded to have accepted 'deposited waste, including inert waste' between 1940 and 1980. This includes the refuse heap located to the south of the site. Further details of the specific types of waste deposited are not available. Jacobs report that a second landfill was located in the centre and eastern area of the site which received parks and highways waste.

The sewage works is not shown on the 1961 OS map. Jacobs reported that backfilling and uncontrolled fly tipping took place following the closure of the sewage works which included abandoned cars, empty drums, tyres, electrical appliances, polythene and concrete lampposts. Jacobs also reported that some structures associated with the sewage works may have been buried below ground.

A number of off-site industrial activities are identified on the historic maps including a former gas manufacture and distribution site (approximately 60m from the site), an operating gas works (approximately 200m from the site), a scrapyards (approximately 30m from the site) and railway lines (approximately 20m from the site). The Friern Barnet Hospital landfill site is located north of the site on the opposite side of Pinkham Way north circular road in the location of what is now the Friern Barnet Retail Park.

Ground Investigations

The Jacobs report lists previous ground investigations that have been undertaken on the site. Rendel Scientific Services detected the presence of methane and carbon dioxide during a Landfill Gas Survey in 1991, although the spike test method used is not considered a robust method for gas risk assessment. An Environmental Desk Study undertaken by WS Atkins in 1998 refers to a 1984 Caleb Brett investigation which reported no significant contamination although these findings cannot be calibrated with current contaminated land standards as significant changes have occurred in the past twenty years. Waterman Environmental undertook a desk study in 2002, although further details regarding the scope or results of this study are not available at this time.

Jacobs was commissioned by the LBB to assess development constraints for the site. A combined geotechnical and ground contamination investigation was undertaken in March 2008. This included 14 trial pits and five boreholes with installations for gas and groundwater monitoring. Some large areas of the site (particularly the centre), were inaccessible due to cover by dense vegetation. Made Ground was encountered at all exploratory holes and Japanese Knotweed and Giant Hogweed were identified on site. During the ground investigation 32 samples (the majority of which were collected from the Made Ground) were submitted for chemical analysis for a range of metals, hydrocarbons and microbiology testing.

In their assessment, Jacobs identify that lead was reported at elevated concentrations in Made Ground, and suspected asbestos sheeting and pipes were identified in the north of the site. Some elevated concentrations of microbial contaminants were reported in soils and groundwater, primarily in the north of the site. Five groundwater samples were submitted for chemical analysis and analysed for metals, microbiology parameters and other common groundwater parameters. One round of gas monitoring was undertaken from five boreholes.

The scope of the gas monitoring is considered limited and further ground investigation was recommended by Jacobs.

An off-site ground investigation was undertaken by TBV science in Hollickwood Park, located adjacent to the west of the site and within the historical boundary of the sewage works. The results showed elevated concentrations of metals and microbial contaminants.

A review of the existing information described above identified that additional ground investigation was required to supplement this and to gain further information on the underlying soils, groundwater and gas regimes at the site.

Arup subsequently designed a ground investigation which was undertaken by Concept Site Investigations Ltd in March and April 2010. The investigation was designed to provide a good coverage of the site and to specifically target areas of suspected contamination such as the former landfill, filter beds and tanks. This included 20 trial pits, one trial trench and 11 boreholes with installations for groundwater and gas monitoring. 65 soil samples were submitted to the laboratory for chemical analysis for a range of metals, hydrocarbons and inorganics. Selected samples were also tested for organochlorine pesticides and polychlorinated biphenyls (PCB). 72 samples were tested for asbestos identification and quantification. Three rounds of groundwater monitoring were undertaken and 14 groundwater samples were submitted to the laboratory for chemical analysis for a range of metals, hydrocarbons and inorganics. Six rounds of gas monitoring and water level monitoring were completed from nine standpipes. The factual information is presented in the Concept Site Investigation Report (June 2010).

A review of the historical data obtained during previous investigations indicates that there is a moderate potential for a range of contaminants to be present in the soils on site, such as metals, hydrocarbons and asbestos, due to the former use of the site as a sewage works and a landfill site, and due to landfilling and uncontrolled fly tipping.

For this reason there is a potential risk of harm to the health of construction workers, site visitors and site neighbours during construction. There is a potential for pollution of perched water or controlled groundwater (in the north of the site only) which may be effected during construction. The risk of pollution to groundwater across the majority of the site is very low due to the presence of London Clay (unproductive strata).

After development approximately two thirds of the site will comprise hardstanding for the construction of the waste facility, depot, roads and parking. The presence of hardstanding limits the potential exposure for many end users, although there is a residual risk associated with gases and vapours. The perimeter of the site will be allocated as an ecological and landscaping area, which will include new areas of soft landscaping. There is a potential for end users to come into direct contact with contaminants in areas of landscaping or open space following development. Maintenance workers may come into contact with contaminated ground during the operation of the development.

3.2.2 Proposed Assessment Methodology

The guidance set out by the EA in Model Procedures for the Management of Land Contamination, Technical Report CLR11 (2004) and the key UK policy document Planning and Policy Statement 23 (PPS 23), Planning and Pollution Control, Annex 2: Development on Land Affected by Contamination (2004) will be followed for the assessment of significant effects for both construction and operation. The Coalition Government has identified its intention to review the planning guidance, and PPS23 (including Annex 2) may be withdrawn or replaced in 2011. Relevant documents will be consulted in this event. The requirements of the London Borough of Haringey's SPG 8f Land Contamination will also be considered.

Baseline conditions will be established by undertaking a detailed desk study review of the history, stratigraphy, hydrogeology and geological setting of the site and the surrounding environs, and a detailed assessment of data contained in the Landmark Envirocheck Report, Jacobs Phase 1 and Phase 2 Land Quality Reports and Concept Site Investigation Report. In addition, consultation will be undertaken with the LBB and the EA regarding information held in their records for the site and its environs.

A conceptual model will be developed and a contamination risk assessment will comprise a review of the construction methodology and end use, consideration of the effects of the groundworks on the prevailing conditions at the site and a consideration of the results of the ground investigation on the identified receptors. It will identify the requirements for mitigation in construction and operation, and for protection against ground contamination in the design of the development (such as gas and vapour protection for example). The contamination assessment will be risk-based and consider sources, receptors and plausible pollutant linkages in accordance with government guidance and the UK framework for the assessments of risks arising from contaminated land.

In the event of negative effects, potential mitigation measures will be identified that may be applied to minimise or eliminate the risks. Construction works, including excavation, spoil handling, piling and disposal will be implemented in accordance with an approved Code of Construction Practice, to prevent pollution of ground waters, and to protect human health.

3.3 Ecology

3.3.1 Existing Conditions and Likely Significant Environmental Effects

Jacobs undertook an Extended Phase 1 Habitat Survey and desk-based records search in January 2008. This information has been reviewed and updated by Arup in August 2009.

Lee Valley Special Protection Area (SPA) and Ramsar Site and Epping Forest Special Area of Conservation (SAC) are within 10km of the site, as shown in Figure 3.

The Lee Valley SPA comprises a series of linked wetlands and reservoirs across 20 km of the valley. These wetland habitats support wintering wildfowl, with

internationally important populations of gadwall *Anas strepera* and shoveler *Anas clypeata*. Areas of reedbed within the site also support significant numbers of wintering bittern *Botaurus stellaris*.

Epping Forest SAC comprises ancient wood pasture habitats, with ancient semi-natural woodland, acid grassland and pockets of wetland. It supports invertebrates that depend upon dead wood, amphibians (including great crested newt), breeding birds and reptiles.

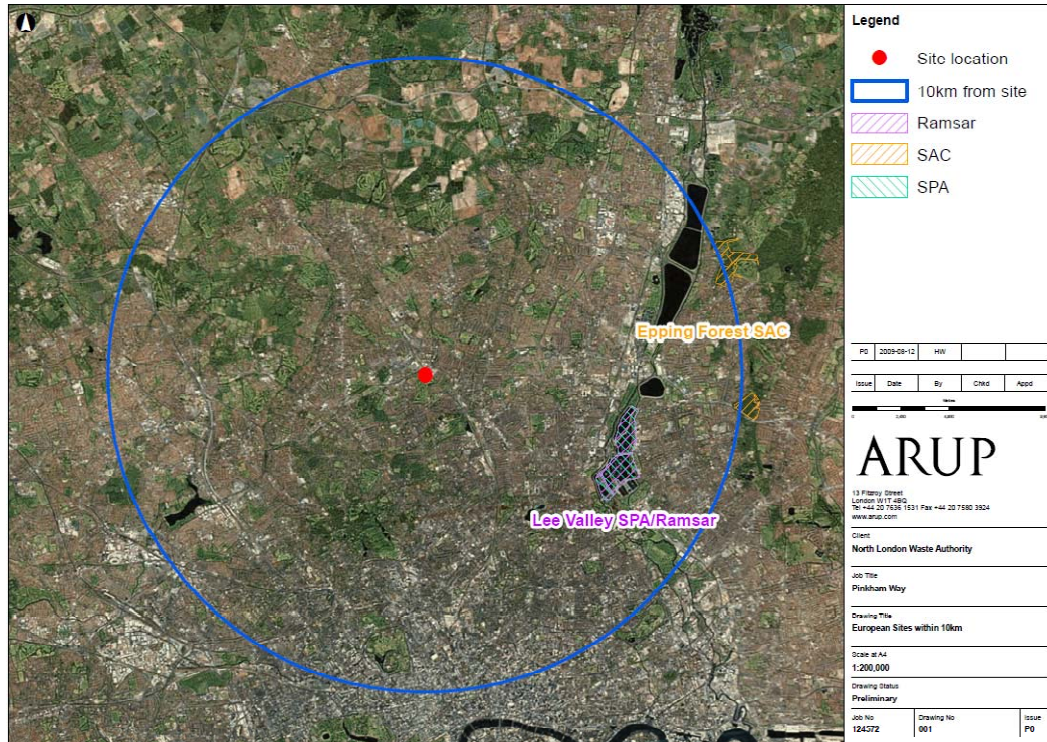


Figure 3: European designated sites within 10km of the site

The only other statutory designated site within 2km of the site is Coppetts Wood and Glebelands Local Nature Reserve (LNR), located 1km to the west of the site, as shown in Figure 4. Habitats at this site comprise woodland and ponds.

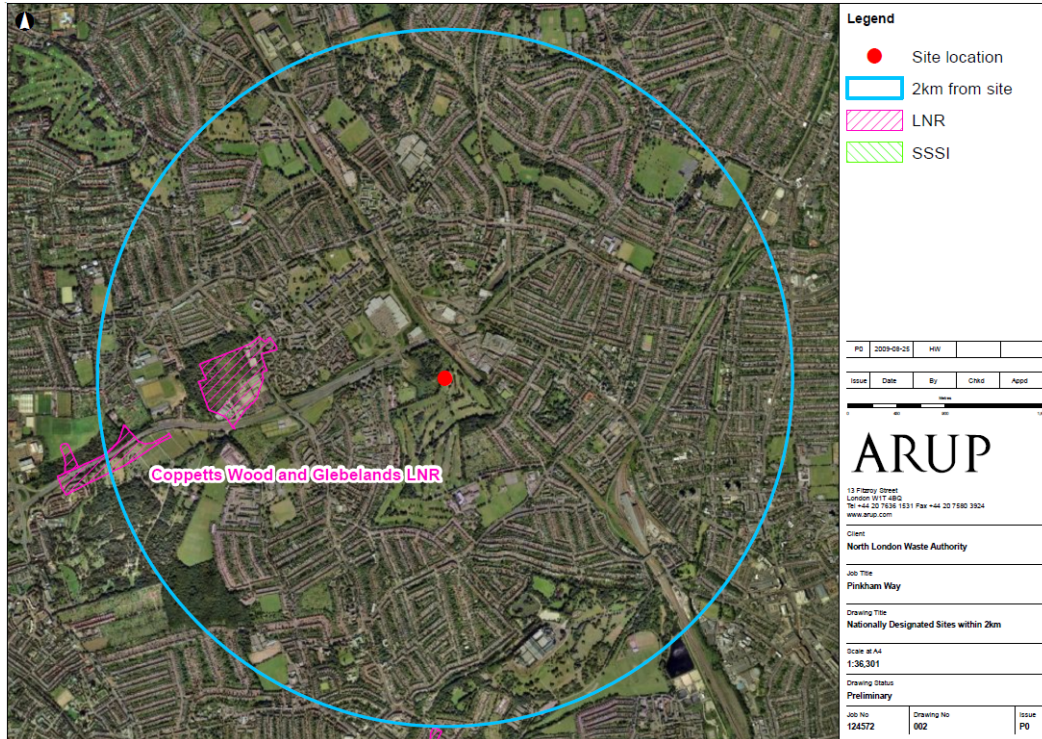


Figure 4: Other statutory designated sites within 2km of the site

Three non-statutory designated sites are present on or adjacent to the site, as shown in Figure 5.

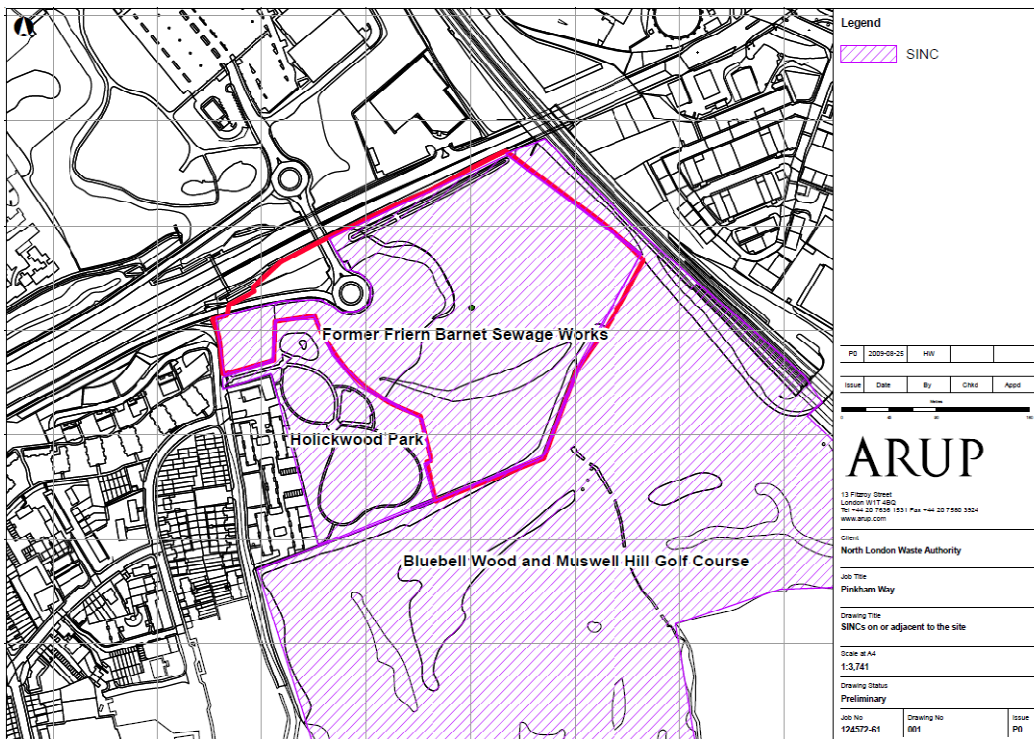


Figure 5: Non-statutory designated sites on or adjacent to the site

The site lies within the Former Friern Barnet Sewage Works Site of Importance for Nature Conservation (SINC) of Borough Grade I Importance. This site is designated for its botanical diversity and for the presence of the uncommon plant

bee orchid and nationally scarce golden dock. It should be noted that bee orchid was not found to be present on site during a botanical survey undertaken in May 2009 and the presence of golden dock has not been confirmed. Prior to any mitigation there is likely to be a significant adverse effect on this non-statutory designated site as a result of loss of habitat.

To the immediate south of the site is 'Bluebell Wood and Muswell Hill Golf Course SINC' of Borough Grade I Importance. Bluebell Wood comprises just over 1ha of ancient woodland. The golf course contains extensive areas of acid and neutral grassland.

To the immediate west of the site is 'Holickwood Park SINC' of Borough Grade II Importance. This comprises meadows and shrubberies and a pond.

There is the potential for significant adverse effects on these sites as a result of disturbance during construction and operation, and suitable mitigation would need to be put in place to minimise these effects.

Figure 6 shows an aerial view of the site and surrounds and provides an indication of the types of habitat present.



Figure 6: Aerial photograph showing habitats on site and in the surrounding area

The site only supports common bird species and following an initial survey it was concluded that a detailed breeding bird survey was not required.

A series of detailed botanical and protected species surveys were undertaken by Jacobs during the period April – June 2009, a summary of which is presented here:

Botanical: A survey undertaken in May 2009 found four main habitat types present on site for which botanical species lists were compiled. These comprised woodland and scrub; tall herbaceous vegetation dominated by Russian comfrey;

ruderal and ephemeral/short perennial and mature/semi-mature trees along the boundaries. No signs of bee orchid *Ophrys apifera* were found. The time of year was not appropriate to confirm the presence or absence of golden dock *Rumex maritimus*. Further botanical surveys were undertaken in 2010 to verify the presence or absence of golden dock and bee orchid on site. No evidence was found to suggest that either species persists in the area. However, a brief survey to confirm their absence from site is advised immediately prior to the commencement of construction activities. In the event that individuals of either species are discovered, translocation measures would need to be implemented.

Bats: A tree inspection and two dusk activity surveys were undertaken by Jacobs between April and June 2009. Common pipistrelle *Pipistrellus pipistrellus* were recorded commuting and briefly foraging on site. A series of evening bat activity and emergence surveys were undertaken by Arup ecologists in September 2009 over a period of four evenings. The surveys identified one specific area along the northern boundary of the site where a roost was suspected to exist and patterns of foraging and commuting by bats were recorded across the site, suggesting other roosts may also exist within the heavily vegetated centre of the former sewage works. The surveys also highlighted that the site has greater potential for supporting active bat roosts than may have been previously recognised. With this in mind, an extensive survey of all trees on site was undertaken in 2010. This allowed for the identification, assessment and mapping of those trees with potential for supporting bat roosts. The mapping exercise enabled the design of a targeted suite of bat emergence surveys which were subsequently undertaken in summer 2010. The emergence surveys confirmed the existence of key foraging areas and dispersal corridors through the central, north-western and south-western areas of the site. No trees were identified as currently supporting bat roosts.

Reptiles: A reptile presence/absence survey was undertaken by Jacobs ecologists in 2009. No reptiles were found. However, these surveys should be repeated if significant time elapses before development of the site commences.

Great crested newt: Surveys of the pond located just off-site, within Hollickwood Park, found great crested newts to be absent, though it was found to support smooth newt and common frog. However, these surveys should be repeated if significant time elapses before development of the site commences.

Badger: A comprehensive walkover of the site found no signs of occupation by badger. Several holes were identified, but these were used by foxes and rabbits only. If significant time elapses before development of the site commences, then the badger survey should be repeated in 2010 and immediately prior to the works.

Invasive plants: Several stands of the invasive plants Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* were noted and mapped. Jacobs produced a report in May 2009 recommending fencing and appropriate methods for treatment and disposal for Japanese knotweed and giant hogweed.

A full and extensive survey was undertaken by Arup ecologists in summer 2010 which set out to map and GPS reference all stands of Japanese knotweed on site. Several significant new stands of Japanese knotweed were identified during the course of this mapping exercise.

3.3.2 Proposed Assessment Methodology

Consultation has been undertaken with Natural England to agree the scope of the surveys and assessment. Natural England have requested that a Habitats Regulation Assessment (Appropriate Assessment) Screening is undertaken to determine whether there are likely to be adverse effects on European sites as a result of the proposals. Lee Valley SPA/Ramsar and Epping Forest SAC are within 10km of the site and would need to be considered in this assessment.

As the site is designated as a SINC, consultation with Haringey Council is required in order to agree appropriate on-site or off-site mitigation options, to offset the loss of all or part of this non-statutory site.

A qualitative ecological assessment will be undertaken in accordance with the EIA guidance produced by the Institute of Ecology and Environmental Management (IEEM). Where possible, context will be given to the significance of impacts by reference to UK and local biodiversity targets.

The assessment will inform the need for any mitigation, whilst highlighting opportunities to incorporate ecological enhancements within and outside of the scheme.

The assessment will apply qualitative scheme specific criteria taking into consideration the following:

- size, value and sensitivity of the ecological resource;
- severity and direction of potential impacts (positive or negative);
- ability of the ecological resource to recover from temporary effects;
- potential for effective mitigation;
- consideration of duration – short, medium or long-term; and
- consideration of whether effects will be reversible.

The assessment will consider the requirements of the London Borough of Haringey's SPG 8d Biodiversity, Landscaping and Trees

3.4 Landscape and Visual

3.4.1 Existing Conditions and Likely Significant Environmental Effects

Baseline

The Site is bounded to the north and east by retail, light industrial and busy transport infrastructure. The North Circular dual carriageway (A406) forms the immediate boundary to the north, whilst the East Coast Mainline railway forms the eastern boundary.

The topography of the Site is very uneven due to former landfill and sewage works; the level difference is approximately 15m between the highest southernmost point of the Site and the lowest level adjacent to Pinkham Way - North Circular Road.

From the southern boundary of the Site the land rises steadily across the open space of Muswell Hill Golf Course. The railway embankment lies to the east forming a visual screen. To the west and south-west lies the open space of Hollickwood Park with a residential area beyond, gradually rising in height from north to south along Alexandra Road.

Pinkham Way lies partially in a cutting as it runs south-west to north-east along the northern boundary of the Site and the land rises steeply from here up to the Friern Bridge Retail Park and residential areas beyond the crest of the hill.

Vegetation - the vegetative character around the Site is dominated by the open grass space of Muswell Hill Golf course to the south, with swathes of structure tree planting around the boundary. The site itself comprises a mixture of woodland and scrub, with areas of tall herbaceous vegetation, including extensive areas of Japanese knotweed and areas of ruderal and ephemeral/short perennial vegetation, with mature/semi-mature trees along the boundaries.

Hollickwood Park on the western boundary is characterised by a landscaped central grass open space with native scrub and tree planting to the boundary and individual tree planting and swathes of wildflower planting. There is also an existing pond.

The green corridor of the railway embankments forms a visual screen of naturalised, native tree and shrub planting to the east of the Site. Also providing a visual screen to the Site is a significant row of mature trees alongside Pinkham Way. The slip roads either side of Pinkham Way have formally arranged shrub planting, contrasting with the naturally regenerated tree and scrub planting surrounding the rear of the Volkswagen garage, immediately to the north of Pinkham Way and the Site.

Friern Bridge open space, north-west of the Site, provides a further green space typified by open grass and wildflower areas with blocks of native tree and scrub planting and open water.

Both Muswell Hill Golf Course and Hollickwood Park have designations as Metropolitan Open Land (MOL). Winton Avenue Allotments and an area of Ancient Bluebell Woodland lie within the MOL. The railway corridor, lying to the east of the Site, is designated as an ecological corridor.

North of the Site and Pinkham Way lies the Friern Bridge Retail Park; the elevated green open space to the east of this is designated in Barnet's UDP as Metropolitan Open Land.

Likely Significant Effects

The Site is not greatly overlooked by residential areas; potentially the most sensitive receptors are those residents with a view across Hollickwood Park from Alexandra Road, although these views are filtered by the existing mature vegetation within the park. The highest point in the immediate area, with views of the Site, will be from the Friern Bridge Retail Park green space on the north side of Pinkham Way (North Circular Road). Other receptors immediately adjacent to the Site with potential landscape and visual effects, are likely to be users of Muswell Hill Golf Course and Hollickwood Park although these two locations are bounded by tree and shrub vegetation and partial screening is expected to remain.

The Site is an SINC and adjacent to MOL and it will be demonstrated that the proposed development is consistent with requirements set out in LBH and London Plan policies.

It is likely that the presence of a significant amount of existing tree and scrub cover in the surrounding open spaces and along the railway embankments, together with the retention of most of the mature tree line to Pinkham Way on the northern Site boundary, will provide significant mitigation of potential landscape and visual effects arising from both the construction and operational phases of the proposed development.

Potential landscape and visual effects could be mitigated by additional screen planting within the Site and at appropriate off site locations relating to sensitive receptor areas. Advance planting prior to construction would be recommended where appropriate.

3.4.2 Proposed Assessment Methodology

Baseline

Data will be gathered for the Site and surrounding area through site survey and desk based baseline data gathering. The visual envelope for the development is defined as the area over which the physical components or changes caused by its introduction could affect peoples' views of the landscape within the wider area surrounding the proposed development.

Baseline conditions will be established through the following:

- A factual description of the existing landscape (topography, land use, patterns, scale, settlement, transport routes etc).
- Identifying sensitive elements or groups of elements in the landscape (landscape resource).
- Preparing a landscape character assessment to classify the landscape into distinct character areas which display common features and characteristics. Any special values that apply to the landscape will be noted. These are generally identified by statutory and non-statutory designations and are influenced by prepared documentation relating to landscape character. Cultural associations may also be noted where they influence the sensitivity of the landscape resource rather than that of the cultural resource. Each landscape character area is evaluated in terms of sensitivity to change, i.e. the capacity of the landscape to accept change of the type and scale proposed.
- Reviewing the condition of the landscape, including reference to the maintenance and condition of individual elements (buildings, hedgerows, woodlands etc) and an assessment of the potential for landscape enhancement.

The visual assessment will examine the main views of the proposed development from the neighbouring environment, and a desk study and field survey will identify and describe potential visual receptors (residential areas, recreation sites, pedestrian routes). A 'Zone of Theoretical Visibility Map' will be produced to establish the extent to which the proposed development may have an effect over

the wider landscape, and this will be used as a basis for both the landscape and visual assessments.

It is not proposed that photomontages will be produced; however wireframe views of the development from viewpoints will be produced by the architects. These would be overlaid by them on to site photos to give a representation of the effects of the proposed development. These locations have been chosen in consultation with the client and LBH. The number of views required has been established following the landscape and visual baseline survey, in consultation with the LBH.

Consultation

The LBH have been consulted on the scope of view locations to be assessed, and this will form part of the assessment process.

Assessment Methodology

The methodology for landscape and visual impact assessment generally follows the Guidelines for Landscape and Visual Impact Assessment¹. This document is currently under review and the methodology that has been developed for this project seeks to accommodate recent developments in the assessment of landscape and visual effects.

The potential effects arising from the proposed development will be identified, evaluated and assessed as to whether they are considered to be significant. The magnitude i.e. the likely nature and scale of changes to individual landscape elements and characteristics will be described together with consequential effects on landscape character.

For visual effects, potential visual receptors will be identified and their sensitivity judged. This will depend on a number of factors including location of viewpoint, importance of view and the expectations of the receptor (i.e. residents, users of recreational facilities, motorists passing through). The type of view will also be taken into account, for example whether it is a wide panorama, glimpsed or partial view. The immediate effect of the proposals on the surrounding area will be assessed as well as any residual effects after any proposed mitigation has matured.

Determination of the significance of an effect requires the application of professional judgement to weigh the findings of sensitivity of the receptor and the magnitude of an effect. Significant effects may be judged to be adverse or, where the effect results in an enhancement of the existing situation, beneficial.

As part of the assessment, mitigation measures and design recommendations will be identified to address any significant adverse effects, together with an assessment of the likely effectiveness of such mitigation.

Figures illustrating the assessment will be provided, including a Zone of Theoretical Visibility Map.

Relevant guidance and legislation

Relevant planning policy statements and guidance from LBH's UDP and other relevant documents will be reviewed, along with Planning Policy Statements (PPSs); Planning Policy Guidance (PPGs) relating to landscape/urban design and

¹ The Landscape Institute and Institute of Environmental Management and Assessment (2002) Guidelines for Landscape and Visual Impact Assessment, Second Edition

visual issues (including PPS1: Delivering Sustainable Development and PPG17 Planning for open space, sport and recreation); The Greater London Authority's London Plan; and the Commission for Architecture and the Built Environment (CABE) planning guidance.

3.5 Noise

This section of the scoping report reviews the likely significant issues in relation to noise and vibration effects associated with the proposed development. This will inform the assessment process by defining which aspects should be investigated to establish how the surrounding area will be affected by noise and vibration. This will ensure that the breadth and level of detail of the resulting assessment is sufficient to comply with the requirements of the EIA Regulations.

3.5.1 Existing Conditions and Likely Significant Environmental Effects

The area within which the site sits is characterised in the north and east by retail and light industrial uses and a busy transport infrastructure. To the south and west the area has residential, educational and recreational uses. The North Circular dual carriageway (A406) forms the immediate boundary to the north, whilst the East Coast Mainline railway forms the eastern boundary.

Noise sensitive receivers to the west of the site, at Alexandra Road and Pert Close are currently exposed predominantly to road traffic noise.

Winston Avenue, to the south east of the site is exposed to rail noise and intermittent air traffic noise.

At Cline Road, to the east of the site, rail noise dominates, again with intermittent air traffic noise.

Both the construction and operation of the proposed development will give rise to noise emissions which could potentially cause disturbance to nearby sensitive locations, in particular those closest at Alexandra Road. In the case of site preparation and construction work, the potential effects will be temporary whereas operational noise and the movement of vehicles to and from the site could potentially cause permanent noise issues.

3.5.2 Proposed Assessment Methodology

The various potential noise effects associated with the development should be assessed as part of the EIA to demonstrate to the planning authority that these issues have been properly considered. Should there be any significant effects identified, appropriate mitigation measures will be proposed to show that residual effects will be eliminated or minimised.

Construction

The construction noise and vibration assessment will rely on information contained in the construction method statement which will accompany the planning application. Subject to the level of detail contained in this, the noise assessment of construction may be qualitative or quantitative. Construction noise and vibration levels would be assessed at an outline level to examine the noisiest

processes within each phase of the works and the duration of any resulting noise or vibration effects. The guidance in BS 5228: 2009 will be referred to in order to estimate noise levels where possible. The construction noise assessment may be constrained by the availability of construction methodology information. If so, appropriate assumptions will be made and agreed with the scheme engineers. It is considered that this will provide sufficient information to adequately assess potential construction noise and vibration effects. Mitigation measures can then be examined to achieve acceptable noise levels if appropriate.

Alternatively, a qualitative assessment (in the absence of construction data) would be based on agreeing general conditions to control noise levels to prevent excessive noise and disturbance. The likelihood of any the stages of work resulting in significant effects or exceeding local noise limits would be considered based on professional judgement of the nature of the works. The construction assessment would set out the 'best practicable means' as advised in BS 5228 to minimise noise levels. This would include considerations for each stage of the construction works, e.g. site preparation, earthworks, site infrastructure, foundations, superstructures, and landscaping.

Operational noise

Road Traffic

The noise exposure changes arising from new roads associated with the proposed development will be calculated using the Calculation of Road Traffic Noise (CRTN) method. The noise source levels generated by the road are based on the volume, average speed and composition of the traffic

Buildings Plant Machinery

The likely effects will depend on the prominence of the introduced noise relative to background noise levels at each sensitive receiver location. The methodology described in BS 4142 would indicate the likelihood of complaints at nearby residences. Appropriate mitigation would be considered and the residual effects assessed.

For plant machinery associated with buildings a commitment would be made to meet a target noise criteria set by the Council (relative to the background noise level), to ensure these sources do not have an adverse effect.

Consultation

No formal consultation has been carried out to date regarding noise with LBH. The LBH Environmental Health Department will be consulted as part of the EIA process.

Reporting

The methodology, survey results and findings of the assessment would be set out in the ES.

It is a requirement in the EIA process that the effects of other developments in the area are considered and that an assessment of cumulative effects is undertaken.. This will be carried out relying on information already available from other development projects in the area that are under construction or with extant planning permission.

Where appropriate mitigation measures will be indicated and an assessment of the residual noise levels will be made.

3.6 Transport

3.6.1 Existing Conditions and Likely Significant Environmental Effects

The site is not currently accessible by vehicles or pedestrians and has no use operating upon it at present. It therefore generates no movement on the surrounding transport networks and this has been the case for some time, although the construction of the roundabout and the site's designation as employment land indicate a perceived level of suitability for development.

Vehicular access

Although the site lies within LBH, vehicular access to and from the site is achieved from Pegasus Way and Orion Road which lie within LBB. These roads are linked to the grade-separated junction of the B550 Colney Hatch Lane with the A406 some 700m to the west of the site. There is no direct access to the site from the A406 itself.

LBB is the highway authority for the roads listed above, with the exception of:

- the roundabout junction of Pegasus Way with Orion Road, which lies within the LBH boundary but at present can only be accessed from LBB roads; and
- the A406 North Circular Road, which is part of the Transport for London Road Network (TLRN) for which Transport for London (TfL) is the responsible highway authority.

Pedestrian access

At present the site is not accessible to pedestrians, although pedestrian routes are available on the surrounding street network. In addition a footbridge, located approximately 150m to the west of the site, provides a pedestrian connection between Orion Road and Atlas Road across the A406.

Public transport

The nearest bus service to the site operates along the A406 (route 232) with stops located immediately to the west of the Pegasus Way bridge. Additional bus services (routes 43, 134 and 234) operate on Colney Hatch Lane with stops some 900m west of the site, and on Station Road / Bounds Green Road (route 221) with stops some 950m east of the site.

National Rail services are available at New Southgate station which is approximately 900m north of the site.

The site has a Public Transport Accessibility Level (PTAL) of 1a, rated as 'very poor' on a scale where 1a is the lowest possible accessibility and 6b the highest.

Likely significant effects

It is likely that effects in relation to transport may include:

- The effect of construction traffic and construction personnel movements on the surrounding highway network during the construction period. This may be addressed through measures related to hours of working, vehicle access routes and options for construction personnel to travel by means other than the private car. Given the proximity to the A406, which is a strategic route, the effect of construction traffic on more local roads may be limited; and
- The effect of operational traffic movements and staff movements on the surrounding highway and public transport networks. As the site is not expected to be open to the public these effects may not be extensive; however the possibility of vehicle movements at ‘unsociable’ times (late evening or early morning) will need to be considered and appropriate measures proposed to mitigate these if necessary.

3.6.2 Proposed Assessment Methodology

The assessment methodology will follow the principles of TfL’s *Transport Assessment Best Practice* guidance document (April 2010) together with any other specific requirements that emerge from consultation with the local highway authorities (London Boroughs of Barnet, Haringey and if necessary Enfield).

Relevant policies of these boroughs and of TfL will also be reviewed, together with relevant national and regional policies, to provide background for the assessment and the identification of any mitigation measures.

The key elements of the methodology will be:

- identification of background conditions including public transport services, cycling and walking connections, traffic flows on surrounding roads and the level of operation of the highway network with reference to its capacity;
- identification of potential construction vehicle traffic movements by month and typical day during the construction period, and of construction personnel levels at the site;
- identification of operational vehicle movement activity related to the uses on the site, including that during typical highway peak hours and at other times of peak activity, particularly where these are late in the evening or early in the morning;
- identification of operational staff levels and activity at the site;
- assessment of the likely routes taken by vehicles and staff travelling to and from the site;
- identification of car parking requirements and provision within the site;
- analysis of the likely effects of the movements generated during construction and operation in relation to their distribution across the transport networks, the operation of the highway network and key junctions, and the effects on local public transport services; and

- assessment of any mitigation required as a result of these effects, and where appropriate the identification of residual effects once mitigation measures are in place.

At this stage it is expected that key locations in relation to effects on the highway network will be limited to the A406 and its junctions with Colney Hatch Lane to the west and Station Road / Bounds Green Road to the east. Where necessary measures to address any effects on immediately adjacent residential streets will also be considered.

The adjacent boroughs and TfL will be consulted to ensure that concerns are addressed, as far as possible, in the transport assessment work.

3.7 Waste

3.7.1 Existing Conditions and Likely Significant Environmental Effects.

Existing Conditions

The site of the proposed development currently consists of a mixture of grassland, woodland, scrub and some limited hard-standing that provides tracks and paths across the Site. It is understood that there are no permanent structures on-site and so it is considered unlikely that any waste is currently generated apart from very small quantities of litter that may be deposited by people passing through the Site.

Waste would be generated during both the construction of the proposed development as well as the administrative and maintenance activities associated with running the facility. This may require off-site disposal to landfill if the waste cannot be prevented, re-used, recycled or recovered in terms of material resources or energy.

According to latest available data from the Environment Agency, approximately 6.6 million tonnes of 22 million tonnes of waste London produces was sent to landfill in 2008 (Environment Agency: State of the Environment in London, August 2010) of which the majority is managed outside of the Region. There are no landfill disposal sites situated within the LBH and information provided by the Environment Agency for the year 2009, shows that remaining landfill capacity in Greater London was estimated at 4,684,000m³, of which 289,000m³ was inert landfill void space, 4,152,000m³ was non-hazardous landfill void space and 242,000m³ was hazardous landfill void space. Total landfill capacity in Greater London has decreased by almost 50% since 2007.

Likely Significant Environment Effects of Construction Waste

Waste generated during the construction phase will arise from:

- Site clearance, excavation and earthworks. The full extent of these works is currently unknown, as is the potential to re-use material on-site. Whilst the effects of construction are only temporary, it is likely that quantities of inert, non-hazardous and hazardous waste requiring off-site disposal will be generated due to the uneven topography of the site which may involve significant earthworks. Section 3.2 (Contaminated Land) also indicates that there is a moderate potential for a range of contaminants to be present

in the soils on-site, including heavy metals, hydrocarbons and asbestos. This is due to the site's previous industrial use as a sewage works and as a landfill site, former uncontrolled fly-tipping and the use of adjacent land for gas manufacture and distribution. As such, there may be potential for a significant quantity of hazardous waste to be disposed of off-site if it cannot be suitably remediated and re-used on or off-site.

- Construction of on-site facilities is likely to generate a mixture of inert and non-hazardous wastes requiring off-site disposal as a result of the construction process itself and material wastage (such as off-cuts of timber, packaging waste or surplus construction materials).
- Some commercial and industrial (C&I) waste would be generated by construction staff occupying temporary site accommodation during the build programme. Given the size of the Proposed Development site and the relatively simple nature of the premises that are being constructed (i.e. main hall for waste processing operations and small-scale office accommodation), it is likely that the construction works will be of a short-term and temporary nature. As such, it is unlikely that the C&I waste generated will give rise to significant environmental effects.

Given the potential types and quantities of waste that are likely to arise, it is proposed that waste generated by site clearance, excavation, earthworks and construction should be scoped in to the assessment of the likely significant environmental effects of solid waste generation. C&I waste that would be generated by construction staff is proposed to be excluded from the assessment.

Likely Significant Environmental Effects of Operational Waste

Operational waste would be generated on a day-to-day basis by site workers and visitors to the site. This waste would be generated in offices, staff welfare facilities and re-fuelling facilities, with the latter likely to generate some hazardous wastes, such as waste vehicle oils, oil filters, and oily rags etc, which would require off-site management via a hazardous waste treatment facility. It is likely that most other wastes would be largely non-hazardous and comprise of paper and cardboard, plastic bottles, aluminium cans, food packaging and food waste.

The quantity of waste generated is likely to be small based on the likely number of staff for the LBB vehicle depot; staffing levels for a resource management facility of the size proposed (i.e. up to 300,000 tonnes per annum capacity) are likely to be in the region of 20 to 25 people. The potential number of visitors to the site is unknown but is likely to be small given the type of operations at the site. As such, it is proposed to scope out operational waste from the assessment of the likely significant environmental effects of solid waste generation.

The scope of the assessment will also exclude the waste that would be brought to site for processing at the waste facility. The purpose of the waste facility is to treat residual waste collected from householders, municipal premises and some businesses (known as municipal solid waste [MSW]) principally in the London boroughs of Barnet, Enfield and Haringey. According to latest available data, 944,383 tonnes of MSW was managed by NLWA in 2007/08, of which approximately 31% (292,428 tonnes) was sent to landfill, the majority at Brogborough in Bedfordshire and Calvert in Buckinghamshire.

The proposed waste facility would enable the diversion of residual MSW from landfill and so will allow a significant improvement in waste management arrangements made by NLWA. The outputs of the proposed resource management facility would be destined for further recovery, for example as solid recovered fuel. Any reject material unsuitable for processing may be landfilled (depending on the type of waste) but this is likely to be a minor fraction of the waste arriving at the facility.

Overall, the operational waste generated and processing of MSW on-site is unlikely to have a significant environment effect and so will not form part of the environmental impact assessment (this will be dealt with through the permitting process with the Environment Agency and their subsequent monitoring).

3.7.2 Proposed Assessment Methodology

Given the potential types and quantities of waste likely to arise, the assessment will seek to establish the likely significant environmental effects of solid waste generated during the construction phase only. This will include site clearance, excavation and earthworks, and construction of the new structures proposed for the Site.

Baseline conditions with respect to existing waste arisings and waste management infrastructure capacity within the LBH and Greater London will be identified by a desk-based review. Development planning, and waste management policy and strategy, for the LBH, Greater London and England, which will be of relevance to the assessment and mitigation of the likely significant environmental effects of solid waste generation will also be considered as part of the baseline review.

The amount of solid waste requiring off-site disposal to landfill during construction will be quantified as follows:

- **Site Clearance, Excavation and Earthworks:** The quantity of waste forecast to be generated during excavation and earthworks will be based on information that will need to be provided in relation to the volumes (m³) and types of material that would be generated by activities such as piling, bulk excavation works, site regrading and removal of any hardstanding.
- **Construction:** The amount and type of waste forecast to be generated during construction would be based on the proposed quantum of development and construction waste generation rates published by the Building Research Establishment (BRE), as part of its suite of 'SMARTWaste' environmental performance indicators (EPI) for the construction industry. The indicators relate to different types of new build only and the most up to date information available will be applied according to the types of building to be constructed, e.g. industrial or office-type premises.

The amount of waste requiring off-site disposal will be determined by taking into account any measures incorporated during the design stage, e.g. such as an earthworks strategy that seeks to achieve a cut-and-fill balance on-site, and local and regional targets for recycling construction waste as specified in waste strategy or planning and development policy.

There are no recognised significance criteria for the assessment of the likely significant environmental effects of solid waste generation. The criteria used

would be based on professional judgement, taking into account the amount of waste that would require landfill disposal and the capacity of landfill predicted to be available in Greater London during the proposed construction programme.

The assessment will give consideration to the phasing of the proposed development and will take into account cumulative effects that may arise as a result of other major existing consented development being realised.

The assessment of the likely significant environmental effects will consider measures already incorporated into the design and additional mitigation measures agreed with the North London Waste Authority. These will be based upon the principal objectives of sustainable resource and waste management and will be influenced by existing strategies specified by waste strategy and development planning policy at national, regional and local level.

Residual environmental effects will be identified on the basis of full implementation of these mitigation measures.

Consultation will be undertaken primarily with the LBH as the local planning authority for the proposed development.

3.8 Water Resources, Drainage and Flood Risk

The water resources assessment will cover issues relating to surface water and foul drainage, hydrology and flood risk, groundwater resources and water quality (excluding contamination which is dealt with separately).

3.8.1 Existing Conditions and Likely Significant Environmental Effects

Existing Conditions

Hydrology: A utility search along with historical studies undertaken as part of a previous Land Quality Assessment has indicated that a culverted water course runs through the site. The culverted watercourse runs broadly from the centre of the site in a northerly direction, connecting with another culverted watercourse on Pinkham Way. These culverted watercourses are believed to contain sections of Bounds Green Brook, which historically ran at surface level. These culverts allowed the construction of the sewage works and the North Circular Road at Pinkham Way. The culvert running across the site is classified as an Ordinary Watercourse. It is not maintained by Thames Water or the Environment Agency and information regarding depth and size of the culvert are not known. Further consultation is required to confirm details of the water course.

The existing site is the location of a former sewage treatment works however, it is believed that minimal positive drainage exists and runoff in a rainfall event will discharge to the underlying geology. However, the topography of the existing site suggests that the site will drain to the location of the existing culvert and therefore, positive drainage connections to this may be present.

Flood Risk: The EA produces floodplain maps for the UK, which show the areas at risk of fluvial and tidal flooding. The magnitudes of the flooding events considered are defined in terms of their return period. Generally, when determining the impact of any development within the floodplain of a fluvial

reach, the design standard against which the EA will consider the feasibility of any scheme is typically the 1% annual probability flood (1 in 100 year return period flood) for sites within the floodplain, or the effects of a 1 in 100 year storm if outside the floodplain.

The EA flood zone maps identify undefended floodplain, giving the horizontal extent of low (Zone 1), medium (Zone 2) and high risk flood zones (Zones 3a and 3b). They do not describe the vertical dimension of flood risk and do not take into account the Flood Defences along a watercourse. The EA flood maps show that the majority of the site is in flood zone 1 (outside the 1 in 100 year fluvial flood plain) apart from a very small proportion to the north of the site adjacent to Pinkham Way, which is located within Flood Zones 2 and 3a.

Historical flooding has not been recorded in this area (subject to confirmation from the EA).

Groundwater Flooding: Based on information in the JE Jacobs 'Development Constraints Report' (April 2008) the majority of the site is currently underlain by Made Ground which sits above London Clay. A small section of the site along the northern boundary is underlain by River Terrace Deposits and considered to be a minor aquifer.

There are no known issues with groundwater flooding in the area however this will be confirmed through consultation with the Environment Agency.

Water Resources: No water mains are present within the site area. The contamination report conducted by JE Jacobs (April 2008) has indicated nearby water mains along the western and northern boundaries along Alexandra Road and Pinkham Way / North Circular Road respectively. Thames Water has not yet confirmed a connection point that is able to serve the development.

Likely Significant Effects

Potential issues (in absence of mitigation or appropriate design) as a result of the construction and operation of the development could be as follows:

- Increased surface water runoff due to increased impervious area and changes to topography/ground levels resulting in increased flood risk on or off-site;
- Impedance of flows across the existing fluvial flood plain and a reduction in floodplain storage volume on site;
- Impedance of groundwater flows in the northern extent of the site;
- Increased foul discharge to local sewer network
- Increased water demand from local water supply network;
- Discharge of polluted water to local watercourses/ to the existing culvert (e.g. due to poor management of run-off from car-parks either directly or indirectly);
- Discharge of polluted water to the ground could have a negative effect on the underlying aquifers where presence of the protective upper clay layer is thin/non-existent.

3.8.2 Proposed Assessment Methodology

The proposed scope for the water resources assessment will be:

During construction - Qualitative assessment of likely discharges and water quality effects. An assessment would be made of cumulative construction effects.

During operation - Quantification of likely proposed storm and foul discharges, any rainwater / greywater harvesting and comparison with existing (desk-based) discharges. An outline drainage / site water strategy would be considered as the basis for the assessment, together with any proposed sustainable urban drainage systems (SUDS). The proportion of impermeable areas, before and after development, would be used to assess likely runoff. A qualitative assessment (desk-based) of likely water quality effects of any discharges (direct or indirect) would be undertaken. An assessment would be made of cumulative effects (qualitative/quantitative).

The proposals will be considered in the light of good practice for water conservation and mitigation opportunities (e.g. water recycling/re-use, SUDS, alternative water sources) will be identified for potential incorporation into the design, and residual effects assessed.

In line with PPS25 a Site Specific Flood Risk Assessment (SSFRA) will be required for the site. This is required to assess the risk of all forms of flooding to and from the development and demonstrate how flood risks will be managed taking climate change into account.

Consultation

The Environment Agency has been consulted with regard to the existing flood risk at the site. They have confirmed that the majority of the site does not lie within a flood plain apart from the small proportion to the north of the site. They have not provided guidance on the content required for the Site Specific Flood Risk Assessment. It is recommended that further consultation is completed at the appropriate stage of the work to highlight any specific requirements for inclusion in the hydrology chapter for the ES and for the site specific flood risk assessment.

Existing water supply and sewerage service records have been obtained from Thames Water. No formal approach has been made for information on the available capacity in their networks. It is recommended that this is completed at the appropriate stage of the work.

Appendix A

Planning Drawings

A3

A

B

C

D

E

F

G

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1

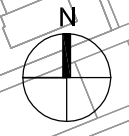
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

4

5

6



Legend

-  Planning Application Area
-  Development Area A
Resource Management Facility - Building
Resource Management Facility - Vessels
Resource Management Facility - Plant
Offices and Visitor / Education Centre
-  Development Area B
Welghbrkde and control cabins
-  Development Area C
Offices, storage and welfare facilities
-  Development Area D
Refueling facility canopy area
-  Development Area E

A	23/02/11	DJ	DH	PB
Issue	Date	By	Chkd	Appd

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Client

North London Waste Authority

Job Title

Pinkham Way

Scale Bar 

Drawing Title

Plan 05
Proposed Development Zone

Scale at A3 1/2000 @A3 1/1000 @A1

Discipline Architecture

Drawing Status

For Issue

Job No 124572-62	Drawing No SK 14 005	Issue A
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Appendix B

Response from GLAAS

Helen Glass
Arup
13 Fitzroy Street
London W1T 4BQ

Our ref:
Your ref:

Telephone
Fax

15th September
2009

Dear Helen,

TOWN AND COUNTRY PLANNING ACT 1990
PLANNING POLICY GUIDANCE NOTE 16, November 1990

Re: Proposed Waste Facility, Pinkham Way, Muswell Hill, LB Haringey

No recommendation for further archaeological work

Thank you for your letter of 26th August 2009 following our discussion regarding the above proposed site.

I would agree with your conclusions, based on the research you have presented. It would appear very unlikely that any archaeological remains that may once have been present on the site would have survived the continuous truncation imposed upon it.

I do not consider that further archaeological assessment needs to be undertaken for development in the area which you have outlined, nor would be recommending to the LB Haringey that archaeological issues need to be taken into consideration when determining any application submitted for the site.

Please do not hesitate to contact me should you have further queries.

Yours sincerely,



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