



Aggregate Recycling Plant,
Asphalt Production Plant and
Gully Waste Recycling Plant
Bulls Bridge, Hayes

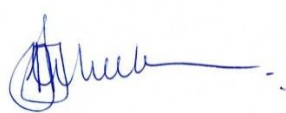
Sustainability Statement

Prepared for:
FM Conway Ltd

Prepared by:
ENVIRON
Exeter, UK

Date:
August 2012

Project or Issue Number:
UK11-17199

Contract No:	UK11-17199
Issue:	Final
Author	V Pearson
(signature):	
Project Manager/Director	J Curran/M Wheeler
(signature):	
Date:	August 2012

This report has been prepared by ENVIRON with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between ENVIRON and the Client. This report is confidential to the client, and ENVIRON accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by ENVIRON beforehand. Any such party relies upon the report at their own risk.

ENVIRON disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services.

Version Control Record				
Issue	Description of Status	Date	Reviewer Initials	Author Initials
A	First Draft	16/07/12	JC	VP
B	Second Draft	20/07/12	JC/MW	VP
1	First Issue to Client	24/07/2012	MW	MW
1A	Amendments to incorporate Development Description updates	15/08/2012	MW	MW/VP
1B	Amendments to incorporate Client comments	20/08/2012	JC	VP/MW
2	Second Issue	22/08/2012	MW	MW
3	Final Issue to London Borough of Hillingdon	05/09/2012	MW	MW

Contents

Executive Summary	i
1 Introduction	1
1.1 Background	1
1.2 Sustainability Agenda	1
1.3 Purpose and Scope of Report	2
1.4 Structure of Report	2
2 The Site	3
2.1 Site Context and Location	3
2.2 Site Description	4
3 Proposed Development	6
3.1 Proposed Development Scope	6
3.2 Proposed Development Layout	6
3.3 Proposed Development Components and Processes	9
3.4 Proposed Development Appearance	15
4 F M Conway Ltd Approach to Sustainability	18
4.1 Introduction	18
4.2 Recycling	19
4.3 Future Recycling	19
5 Sustainability Appraisal Approach	20
5.1 Introduction	20
5.2 Policy Context	20
5.3 Key National and Regional Policy	20
5.4 Key Local Policy	24
5.5 Key Performance Indicators	27
5.6 Design Workshop	31
5.7 Contributing Documents	31
5.8 Measuring Sustainability	32
6 Proposed Development Sustainability Performance	33
7 Conclusions	63
7.1 Overall Performance	63
7.2 Targets Achieved	64
7.3 Targets not Achieved	65
7.4 Commitment to Investigate	65
7.5 Conclusion	66

Annex A: Sustainability Framework

List of Tables

Table 3.1: Proposed Development Built Heights	15
Table 5.1: Proposed Development Key Performance Indicators	28
Table 5.2: Deliverable Progress	32
Table 6.1: Proposed Development Sustainability Appraisal	33
Table 7.1: Proposed Development Performance against Sustainability KPIs	63

List of Figures

Figure 1.1: Site Location	3
Figure 3.1: Proposed Development Layout	8
Figure 3.2: Proposed Development Elevations	16
Figure 4.1: F M Conway Recycling Performance Data	18

Executive Summary

ENVIRON UK Ltd was appointed by FM Conway Ltd (hereinafter referred to as 'the Applicant') to prepare a Sustainability Statement (SS) that will accompany a detailed planning application for the development of an Aggregates Recycling Plant, Asphalt Production Plant and Gully Waste Recycling Plant (hereinafter referred to as 'the Proposed Development') at the former Powergen site (hereinafter referred to as 'the Site'), Bulls Bridge, Hayes, London Borough of Hillingdon (LBH).

The Proposed Development will comprise the following:

- clearance and levelling of the Site;
- capping of the Site with concrete and/or asphalt as appropriate for circulation and parking;
- construction of administration offices;
- construction of an Aggregate Recycling Plant;
- construction of a Gully Waste Recycling Plant;
- construction of an Asphalt Production Plant; and
- implementation of landscaping.

The Site has been identified as a potentially suitable location as a waste management facility in the Joint West London Waste Plan and as an opportunity site in the Southern Hillingdon Area Action Plan for a recycling centre (Policy SHSA 7).

Although the Proposed Development is for a bespoke industrial and waste recycling facility, which has very specific energy, access and layout requirements, the proposals have been assessed against the Mayor of London's Sustainable Design and Construction Supplementary Planning Guidance (SDC SPG) (2006) and LBH local policy, as is standard practice for any development application within London referable to the Mayor.

The SDC SPG provides a framework for assessing development proposals against a number of sustainability principles and provides detailed guidance for Local Planning Authorities within London on the implementation of London Plan policies. It contains a number of essential standards that are applicable to all buildings in London and are considered a minima requirement based on current Building Regulations, the targets set out in the Mayor's strategies, local policy and current good practice. The SDC SPG also contains a second tier of preferred standards which suggests more exemplary approaches that can be followed but which are not yet policy requirement.

The Sustainability Appraisal (SA) methodology adopted within this report has comprised a detailed policy review of current and emerging national, regional and local sustainability policies to provide a specific policy context for the assessment of the Proposed Development.

A thorough examination of the Mayor's SDC SPG formed a particular important element of this exercise and informed the design and content of a bespoke 'sustainability framework', which in turn provided the project team with a set of objectives and targets to take forward in the design process of the Proposed Development.

An appraisal and assessment of the Proposed Development's performance against the SDC SPG standards conclude that overall, the Proposed Development will contribute positively to the Mayor's sustainability objectives.

All essential standards that can be addressed at this stage of the design process have been or will be met or exceeded, with the exception of the following:

- *E 2.5 - Facilities for bicycles and electric vehicles are provided:* Facilities for bicycles will be provided and allowance for vehicle charging points has been made in the power infrastructure so that they could be retrofitted should demand be identified in the future.
- *E 3.3 - Consideration has been given to the ranking method for heating and where necessary cooling systems:* This standard is not directly applicable to this type of development which will have very specific power requirements. However, according to the Proposed Development's Energy Statement, up to 118 m² of photovoltaic panels is proposed to achieve 25% carbon emissions reduction for the two office buildings within the development.
- *E 6.3 - All new gas boilers should produce low levels of NOx:* The Proposed Development will not include any gas boilers. However, the rotary dryers used within the Asphalt Plant will be fired using gas oil as a fuel. The dryers will be fitted with the latest design in burners to reduce fuel consumption, ensure efficient burn with optimum control. At this stage it is assumed that the dryers will be fuelled by gas oil. However, the possibility of installing a gas supply to the Site may be investigated, which has the potential to further reduce emissions.
- *E 8.3 - New public open space is created in an area of deficiency:* It is not appropriate for this type of development to provide publicly accessible open space on-site. However, the Proposed Development will retain a strip of land along the eastern boundary of the Site to safeguard the existing on- and off-site woodland and for landscape and biodiversity enhancement.
- *E 8.6 - Reduction in areas of deficiency in access to nature:* It is not appropriate for this type of development to provide publicly accessible open space on-site. An ecological assessment of the Proposed Development (ENVIRON UK Ltd, December 2011) has been undertaken and measures proposed to mitigate for any potential adverse effects on ecology. Adoption of these measures will ensure compliance with UDP saved policy EC2.

The Proposed Development will exceed relevant targets and demonstrate good practice in the following three of the Mayor's essential standards:

- *E 4.2 - > 50% of timber from FSC (or a CPET) and balance from temperate sources:* Little if any timber will be used in the construction of the Proposed Development. Where, and if required, timber will be FSC sourced or recycled from elsewhere.
- *E 4.8 - A strategy to minimise new aggregates has been prepared:* In the construction of the Proposed Development:
 - structural steelwork will be used that will contain approximately 75% recycled material;
 - sub-bases will comprise 100% recycled aggregate;
 - concrete will be used that is likely to contain a minimum of 10% recycled material (all on-site asphalt surfacing will contain a minimum 20% recycled materials); and
 - recycled secondary aggregates will be used at every possible opportunity.

Once operational, the Proposed Development itself will enable the re-use and recycling of up to 300,000 tonnes of pavement/road planing arisings from infrastructure services per year.

- *E 6.7 - 50% Attenuation of the undeveloped site's surface water run-off at peak time:* The Proposed Development will attenuate 100% of the Site's surface water runoff at peak times through the use of infiltration based techniques. The Site will effectively discharge at greenfield run-off rates.

The Proposed Development will also achieve sixteen preferred standards and of these sixteen, two exceed the targets. These relate to:

- *P 4.9 - 10% total value of materials used will be derived from recycled and reused content:* The Proposed Development will:
 - use structural steelwork that will contain circa 75% recycled material;
 - construct sub-bases from 100% recycled aggregate;
 - use concrete that is likely to contain 10% recycled material as a minimum (all on site asphalt surfacing will contain a minimum 20% recycled materials); and
 - use recycled secondary aggregates at every possible opportunity.
- *P 9.6 - Provide facilities to recycle 70% of commercial and industrial waste by 2020:* The Applicant is committed to achieving a 'Zero to Landfill' target. As such the Applicant has invested over £12m in a new, state of the art asphalt plant and jetty at Erith and continues to invest at its aggregate processing and recycling facility at Dartford. At Erith, approximately 400,000 tonnes/annum of recycled asphalt is produced and at Dartford up to 300,000 tonnes/annum can be processed and recycled. In addition, the Proposed Development is for the construction and operation of an aggregate recycling plant, which, once established, will enable the re-use and recycling of up to 300,000 tonnes of pavement/road planning arisings from infrastructure services per year. The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy.

The Applicant has made commitments to further investigate the following during the detailed design process:

- achievement of preferred standard P3.6 which relates to the use of solar powered outdoor lighting.
- achievement of preferred standard P4.7, that relates to the distance that 50% of construction materials will be sourced from (the target is 35 miles from the Site). The Site will be constructed using recycled secondary aggregates at every possible opportunity, including in concrete. Any concrete found on-site will be processed and re-used in the construction of sub-bases. All construction materials will be sourced from within 35 miles of the Site except possibly for structural steelwork. The target of 50% could potentially therefore be met but this cannot currently be confirmed.
- achievement of preferred standard *P 8.5 - A net gain in biodiversity and access to nature*, it is considered that the Proposed Development has potential to deliver a net benefit for local biodiversity. The Applicant will explore in consultation with the London Borough of Hillingdon any additional opportunities for off-site biodiversity, enhancement if required.
- additions to preferred standard P1.4 which relates to the use of new roof space. The Proposed Development will contain three roofs which could potentially be used for

rainwater harvesting. Rainwater could be harvested from the Aggregate Storage Bays for use in the aggregate washing process and for dust suppression. Rainwater could also be harvested from the office building and weighbridge/plant control office for use in flushing WCs. Living (brown) roofs are proposed on the aggregate storage bays.

The SS demonstrates that the Proposed Development is in accordance with all relevant adopted and draft regional and local planning policies, with the exception of the London Borough of Hillingdon UDP saved policies EC5 and EC6 in relation to ecological impacts and enhancements as some ecological mitigation measures remain to be finalised. However, it is considered that the Proposed Development has potential to provide a net benefit for biodiversity.

In addition, the SS demonstrates that there is a clear commitment to sustainable development principles within the Proposed Development and by the Applicant.

The Proposed Development is inherently sustainable and once operational, it will allow for the re-use and recycling of up to 300,000 tonnes of pavement arisings from infrastructure services per year which will otherwise be landfilled. The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy.

The Applicant is committed to sustainable development through its operations. As such, the Applicant is working towards achieving an objective to recycle 100% of recovered arisings from construction and service operation and to achieve 'zero to landfill'.

In 2011, the Construction Recycling Alliance recognised the Applicant's exemplary efforts in sustainability with the 'Recycling Company of the Year' award. In addition, the Applicant has been awarded numerous industry awards for health and safety and sustainability achievements, and excellence, innovation and best practice in Highways.

1 Introduction

1.1 Background

ENVIRON UK Limited (ENVIRON) was commissioned by FM Conway Ltd. (hereinafter referred to as ‘the Applicant’), to prepare a Sustainability Statement (SS) that will accompany a detailed planning application for the development of an Aggregates Recycling, Asphalt Production Plant and Gully Waste Recycling Plant (hereinafter referred to as ‘the Proposed Development’) at the former Powergen site (hereinafter referred to as ‘the Site’) in Bulls Bridge, Hayes, London Borough of Hillingdon (LBH).

Following the receipt of an Environmental Impact Assessment (EIA) Screening Request compiled by ENVIRON, on behalf of the Applicant, in May 2011, the London Borough of Hillingdon (LBH) confirmed that the development proposals do not fall within Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations (as amended) (the EIA Regulations); however, discreet technical assessment reports would be required to accompany the planning application for the Proposed Development.

This report demonstrates how the Proposed Development meets the requirements of the Mayor of London’s Sustainable Design and Construction Supplementary Planning Guidance (SDC SPG) (2006) and LBH local policy.

1.2 Sustainability Agenda

Sustainable development is in essence about creating solutions that meet environmental, social and economic objectives in a balanced and holistic way.

The UK Government, Scottish Executive, Welsh Assembly Government and the Northern Ireland Administration have agreed upon a set of principles that provide a basis for sustainable development policy in the UK. For a policy to be sustainable, it must respect all five principles. The principles are:

- Living within environmental limits – which includes resource use and biodiversity, to ensure that natural resources are unimpaired and remain so for future generations;
- Ensuring a strong, healthy and just society – meeting the diverse needs of all people in existing and future communities;
- Achieving a sustainable economy – polluter pays principle, efficient use of resources, incentives;
- Promoting good governance – actively promoting effective, participative systems of governance in all levels of society;
- Using sound science responsibly – precautionary principle.

The National Planning Policy Framework (NPPF) launched on 27th March 2012 with immediate effect builds upon these five guiding principles and states that in order to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system. The policies within the NPPF, taken as a whole, constitute the Government’s view of what sustainable development in England means in practice for the planning system.

The Mayor of London has committed to the five guiding principles through its vision for London – “to develop London as an exemplary sustainable world city”. The built environment has an

important role to play in supporting this aspiration and the Mayor of London approved the SDC SPG in 2006 to support the implementation of the London Plan (2004). The SDC SPG sets guiding principles and standards that require the delivery of practical sustainable development through the planning process. Since then the London Plan has been updated and consolidated with Policy 5.3 -Sustainable Design and Construction, advising that major development proposals should demonstrate clearly how they meet the minimum standards outlined in the Mayor's SPG.

A full review of all relevant planning policy is provided in Section 5.

1.3 Purpose and Scope of Report

The purpose of this SS is to provide details of the contribution that the Proposed Development will make to sustainable development locally and regionally. The SS provides a review of the measures incorporated into the Proposed Development in respect of sustainability, outlining the measures that have been taken in terms of site planning, development design and other commitments looking forward to detailed design and construction. It examines the performance of the development proposals in relation to the key aspects of sustainable development identified within the SDC SPG, including energy, resource use, environment, economy and society. The SS also covers sustainable design and construction.

The objectives of the SA are therefore to:

- fully examine and comprehend the key sustainability themes and associated standards within the SDC SPG in relation to the development proposals;
- assess the performance of the Proposed Development in achieving the sustainability standards; and
- identify any commitments and actions required to ensure that sustainability will be delivered during forthcoming detailed design and construction stages.

1.4 Structure of Report

As an introduction, the report gives an overview of the Site and the Proposed Development components. This is followed by a section detailing the approach taken to complete the SA, including the policy documents that have been considered as part of the appraisal.

The appraisal has been based on the suggested checklist structure outlined in the Mayor's SDC SPG. The key aspects of sustainability within the Mayor's checklist are addressed under the following headings:

- Re-use land and buildings.
- Conserve energy, materials, water and other resources.
- Ensure designs make the most of natural systems within, in and around the building.
- Reduce the impacts of noise, pollution, flooding and micro-climatic effects.
- Ensure developments are comfortable and secure for users.
- Conserve and enhance the natural environment, particularly in relation to biodiversity.
- Promote sustainable waste behaviour in new and existing development, including support for local integrated recycling schemes, combined heat and power (CHP) schemes and other treatment options.
- Sustainable construction.

2 The Site

2.1 Site Context and Location

Hillingdon comprises the most western London borough. It borders Hertfordshire to the north; the London Boroughs of Harrow, Ealing and Hounslow to the east; Surrey to the south; and Buckinghamshire to the west. Approximately half of the borough is covered by open land, which is primarily used for agriculture and recreational activities. However, it also contains legacies of past mineral extraction in the form of poorly restored land, particularly in the south.

The Grand Union Canal runs for about 20 kms through the borough and is an important spatial feature linking the urban area with open land and countryside. Another key feature of the borough is Heathrow International Airport.

The London Borough of Hillingdon has four regionally important Strategic Industrial Locations totalling approximately 270 ha. These include three Preferred Industrial Locations (PIL) namely Uxbridge Industrial Estate, Victoria Road/Stonefield Way (in South Ruislip) and Hayes Industrial Area. The latter is the largest industrial area in the borough and benefits from easy access to the motorway system and Heathrow Airport, improved by the completion of the A312 Hayes By-Pass (the Parkway) in 1992.

The Site of the Proposed Development Site is located at Bulls Bridge within the Hayes Industrial Area and centred at national grid reference NGR TQ 107 792 as shown in Figure 1.1

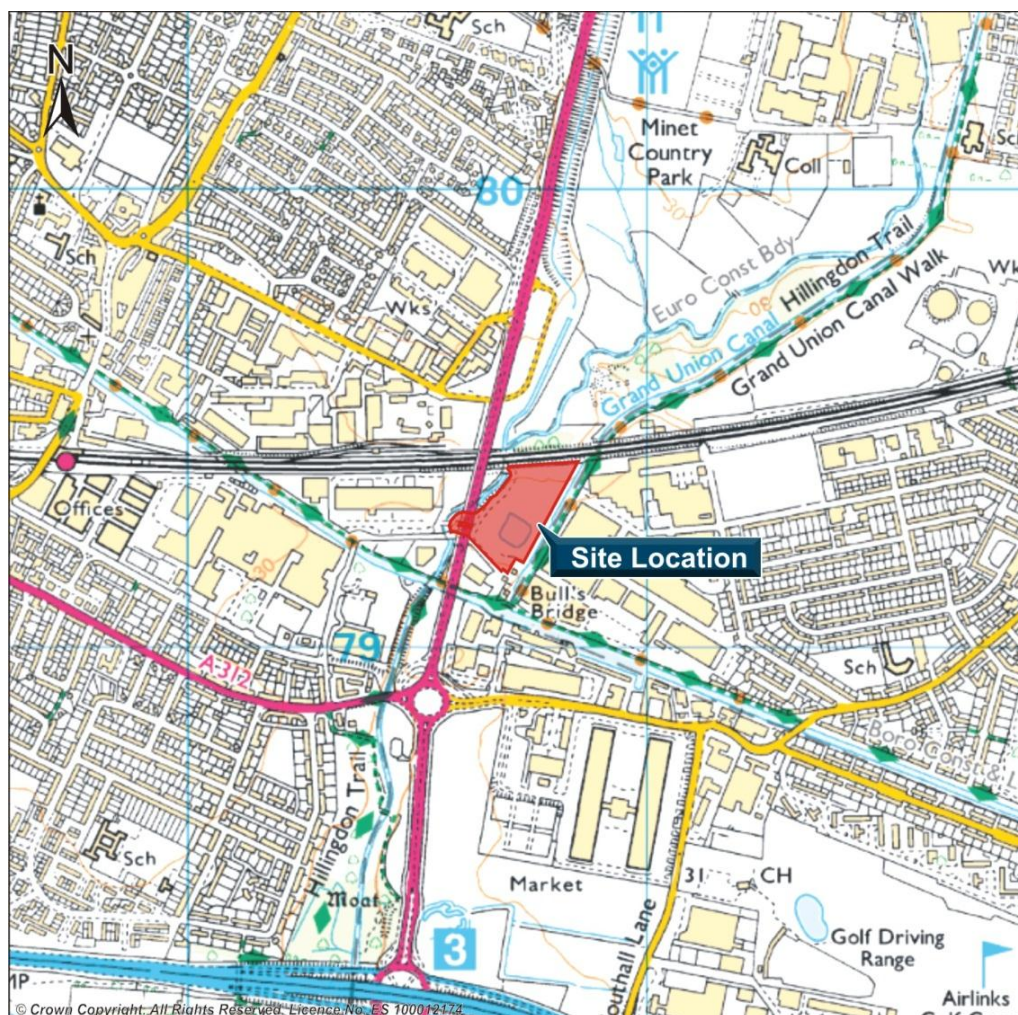


Figure 1.1: Site Location

Access to the Site is off North Hyde Gardens Road, which connects to the A312 (the Parkway) via North Hyde Road. The A312 southbound provides access to Junction 3 of the M4 motorway, approximately 1.3 km south of the Site.

The Site is bounded to the north by the Paddington to Bristol railway line, to the east by the Paddington Branch of the Grand Union Canal, to the south by North Hyde Gardens Road and to the west by the Yeading Brook and Parkway flyover. North Hyde Gardens Road passes under the Parkway flyover to terminate at the Grand Union Canal. An access road off North Hyde Gardens Road to the DHL Lorry Park cuts north-south through the western extent of the Site.

Bull's Bridge marks the junction where the Paddington Branch re-joins the main canal. It is from this point, where the Paddington Branch is shared for some distance between the London Boroughs of Ealing and Hillingdon. The Ealing side of the canal includes the towpath which adjoins the former site of the Southall Gas Works and the industrial land at the junction with the Grand Union Canal mainline. The area south of the Grand Union Canal, including the Tesco Superstore, falls within the London Borough of Hounslow.

2.2 Site Description

The Site is roughly rectangular in shape and occupies an area of approximately 3 hectares. It is brownfield having been previously operational as a Powergen site, a fuel storage facility for the nearby Bulls Bridge Power Station and a creosote works.

All previous structures have been demolished and the Site is now characterised by a perimeter earth and rubble bund and colonized regeneration vegetation. The boundary is defined by hoarding and steel palisade fencing although subject to on-going vandalism and flytipping (particularly the western boundary).

Apart from the perimeter bund (approximately 3 m high), the Site is generally flat. Vegetation predominantly comprises tall ruderal and scrub species, a strip of broadleaved woodland along the Site's eastern boundary, as well as Giant Hogweed along the Site's western boundary, most of which are typical of derelict and wasteland sites. The woodland has been subject to an Arboricultural Survey which has confirmed the majority of trees as Category C Norway Maple trees, with only two Category B English Oak trees.

The western boundary slopes down to the Yeading Brook which is approximately 4.5 m below the Site's ground level.

The A312 flyover crosses the south-west corner of the Site, with one of the flyover supports located on the Site.

According to the BGS 1:50,000 Solid and Drift map of the area, the geology beneath the Site is sequentially as follows:

- Third Terrace of the Taplow Gravel; overlying
- London Clay (which is exposed in the original banks of the Yeading Brook, this is anticipated to be over 20m thick); and,
- Upper Chalk located at depth.

The Site is therefore underlain by a Principal Aquifer at depth beneath London Clay. The deposits of Terraced Gravels are permeable and groundwater is relatively shallow.

The Site is well understood in terms of contaminated soil potential having being subject to a number of historical site investigations. Earlier remediation of the Site resulted in the

installation of a groundwater remedial barrier system along the western Site boundary to prevent pollution of the Yeading Brook.

Site investigations undertaken in 2007 confirmed elevated concentrations of hydrocarbons and PAHs in the made ground, Taplow Gravel Deposits and also in the groundwater at the Site. Moderately elevated concentrations of methane and carbon dioxide were detected during gas monitoring (possibly associated with the degradation of hydrocarbon contamination in the soil and groundwater). Asbestos Containing Materials (ACMs) were identified in the made ground at one location and were also visually observed during a sampling exercise of the stockpiled material.

The Site is located within Flood Zone 1. Flood Zone 1 (Low Probability) is land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding in any one year (<0.1%).

3 Proposed Development

3.1 Proposed Development Scope

The development proposals are for the construction and operation of an Aggregate Recycling Plant; Asphalt Production Plant; Gully Waste Recycling Plant; together with associated ancillary structures and facilities, car and HGV parking, regrading and landscaping.

The redevelopment proposals provide for:

- clearance and spreading of the existing bund material across the Site (as outlined in the Proposed Development's Land Contamination Strategy Report);
capping of the Site with concrete and/or asphalt as appropriate for circulation and parking;
- construction of administration offices;
- construction of an Aggregate Recycling Plant;
- construction of a Gully Waste Recycling Plant;
- construction of an Asphalt Production Plant; and
- implementation of landscaping.

Upon completion the Aggregate Recycling Plant will have a maximum process and recycle capacity of approximately 300,000 tonnes per annum (tpa) of waste material extracted from pavements that will otherwise have been landfilled. Some of this material will be used within the Asphalt Production Plant which will at completion, have a production capacity of 300,000 tpa. In addition, the Gully Waste Recycling Plant, will accept material from road sweepers and gully suckers (that will otherwise have been sent to landfill) to recycle up to 20,000 tpa. The recycled water and the recovered solid materials from this process will be redirected back into the Aggregate Recycling Plant.

The Proposed Development's key objective will be to recycle all the waste materials that arise from the delivery of the Applicant's wide ranging services. These include asphalt; road and pavement sub base, paving, concrete and wet wastes such as gully waste and road sweepings.

The Proposed Development will also serve as an operating centre for the Applicant's Term Maintenance Division by providing parking for vehicles and storage for equipment and materials.

A maximum of 79 workers will be catered for at the Site upon completion of the full development which will include lorry drivers and Term Maintenance operatives working out of the Site.

3.2 Proposed Development Layout

Figure 3.1 illustrates the layout of the Proposed Development, which has been informed by a number of limitations, considerations and requirements, including:

- the constrained area of the Site, especially following the set back of the eastern Site boundary to safeguard existing woodland trees immediately to the east of the Site;
- environmental issues including the location of sensitive receptors, the visibility of the Site, the setting of the Site; the past uses at the Site;
- the Applicant's operational experience based on their existing facilities at Dartford and Erith;

- site logistical arrangements including internal circulation and swept path analyses; and
- design criteria, including the desire to ensure uniformity in building presentation and to 'contain' industrial features to least visible areas of the Site.

In light of the re-spread of existing bund material across the Site and capping layers on top, the current site levels are likely to be raised by up to a maximum of 1.2 m. These materials will be retained by means of a 1.2 m high retaining wall along the entire site perimeter. The following boundary treatment will be implemented on top of this retaining wall:

- north-west: 2.4 m palisade fence;
- north-east :6 m acoustic boundary wall;
- east: 7 m acoustic boundary wall;
- south-east: 3-5 m acoustic boundary wall with 1.2 m high landscaping planters;
- south: 2 m acoustic boundary wall with 1.2 m high landscaping planters; and
- west: 2.4 m palisade fence.

In all instances the walls, and their respective heights, will be provided for acoustic attenuation purposes.

Road access will be provided from two points along the existing road - one access point to the main facility and one access point to the staff car parking located beneath the A312 Parkway.

The development layout will comprise the following:

Northern and North-Eastern Site Area:

- Aggregate Recycling Plant including Washing Plant and Inbound Material Stockpile up to 5 m high
- Low level cement silo
- Water storage tank
- Staff welfare and storage facilities

Eastern Site Area:

- Inbound storage bays
- Covered aggregate storage bays
- Site storage and/or parking (comprising hardstanding areas, enclosed as necessary)
- Water storage tank

Southern Site Area:

- Asphalt Plant
- Asphalt HGV tracking lanes and parking space
- Site storage

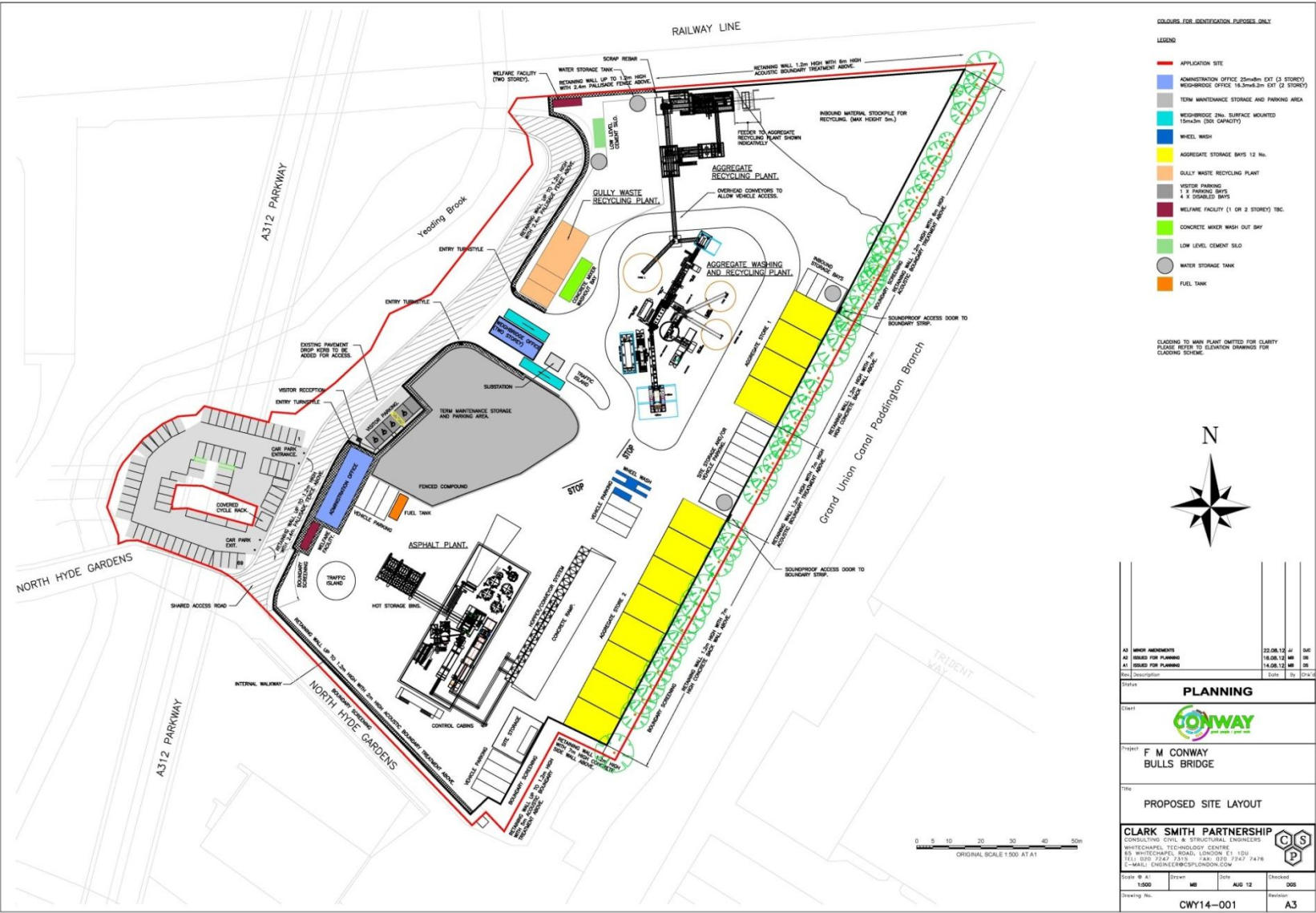


Figure 3.1: Proposed Development Layout

Western Site Area:

- Landscaped car park with 70 car parking spaces, five cycle and five motorcycle spaces
- Staff welfare facilities
- Office building and visitor car parking spaces
- Term Maintenance Yard (enclosed as necessary) and fuel storage areas
- Main site entrance point with entry and exit roads, incorporating weighbridges, on either side of the weighbridge office including the plant control room
- Gully Waste Recycling Plant
- Concrete washout bay
- Water storage tank
- Diesel fuel tank with 60,000 litre capacity and bunded containment of 110%.

Central Site Area:

- Hardstanding and circulation routes
- Drive-through wheel wash

3.3 Proposed Development Components and Processes

This section discusses in more detail the component parts and processes of the Proposed Development, as well as ancillary components.

3.3.1 Aggregate Recycling Plant**Component Parts**

The Aggregate Recycling Plant will comprise a processing plant, screens, washing plant, hoppers, conveyors, fines treatment equipment, control cabins, inbound storage bays (of block wall or sleeper construction) and other ancillary plant, equipment and structures.

The processing plant will be fully housed/enclosed as necessary to accord with the Proposed Development's noise and vibration impact assessment. Dry product conveyors will be enclosed whilst wet product conveyors will be open; dust suppression will be fitted as appropriate (water sprays).

Recovered materials delivered to the Site for recycling will be from the Applicant's existing contracts and will be stored in the inbound storage bays. Materials will typically include the following:

- road and pavement infrastructure materials including asphalt, sub-base, concrete, kerbs, slabs and drainage media (all inert);
- construction and demolition waste – inert only;
- road planings;
- waste asphalt;
- waste concrete;
- solid materials recovered from Gully Waste Recycling Plant; and
- primary aggregate for blending with recycled products.

The combined volume of the above components will reach up to 300,000 tpa.

Processes

The processing of material will be carried out through any combination of processing, re-grading, screening, washing, blending or simply re-handling. The process can be summarised as follows:

- Recovered materials will be delivered to Site in HGVs and unloaded into the inbound storage bays or stockpile in the north-eastern corner of the Site, not to exceed 5 m in height. Potential dust from these stock piles would be attenuated by means of perimeter installed dust suppression sprays.
- The processing plant will be fed material by a hydraulic excavator.
- All Materials will initially pass through the enclosed processing plant and be screened to produce either 0-25 mm product or 0-45 mm material stream. Both these activities will take place within high performance noise attenuation.
- The 0-25 mm material will be further washed and screened by transporting the material, via a semi covered conveyor, directly to the washing plant with a high pressure washing system. The material will be screened to 0-4 mm, producing recovered 4 mm sand and 4-20 mm recovered stone. These products will then be blended to produce fully recycled ballast. The recycled ballast is the principal raw material used by the Applicant's fleet of volumetric concrete mixers. The recycled ballast, together with cement, water and any required additives are mixed at the delivery point to produce fresh concrete. Only the exact quantity of concrete required is therefore mixed to avoid any wastage via the volumetric concrete mixers.
- The processing and washing plant are designed to allow for different size products to be produced including drainage media. The 0-45 mm material will be used for Type 1 sub base, and sold to the Applicant's own contracts or any third party customers. Stockpiles of recycled aggregates will not exceed 6 m in height and will be regularly dampened down to ensure that dust and visual impacts are minimised.
- A loading shovel will be used for moving materials and loading lorries.

The above processes will produce the following products:

- sub-bases;
- capping materials;
- Type 1;
- Type 4;
- drainage media;
- graded aggregate;
- sand;
- ballast; and
- recycled asphalt products (('RAP') a screened blend of road planings) and waste asphalt.

These products will be re-used on-site or loaded for off-site sale or re-use. Any unusable arisings, including fines and filter cake from the washing process, that cannot be re-used will be disposed of off-site. Any scrap metal, wood, plastic or litter will be separated as part of the process and recycled as appropriate. This would be less than 1% of all inbound material.

The above processes will be subject to the conditions of any waste management license as appropriate, issued by the Environment Agency, as is the case with the Applicant's existing Dartford Facility.

Operating Hours

The Aggregate Recycling Plant will operate as follows:

Plant Activity	Weekday Operating Hours	Weekend Operating Hours
Inbound material delivery	24/7, although principally from 07.00-18.00	24/7, although principally from 07.00 - 14.00
Aggregate processing and washing	07.00-18.00	07.00-14.00 Saturday
Loading out of recycled materials for off-site sale or collection by customers	06.00-18.00	06.00-14.00 Saturday

3.3.2 Asphalt Production Plant

Component Parts

The Asphalt Plant will comprise the production unit, an asphalt hot storage facility (with six 80 tonne capacity bins), twelve covered aggregate storage bays and ancillary plant, equipment and structures, including three sea-container style units for the storage of spare parts and equipment.

It will have a rated capacity of 160 tpa incorporating a parallel dryer drum for the use of hot RAP, which will significantly increase the proportion of RAP that can be used in different product mixes.

The hot storage facility would be fed by an enclosed conveyor from a ground level unloading facility. These component parts will all be fully contained and clad as show in Figure 3.2.

The fleet of vehicles serving the Asphalt Plant will be parked in the south-western corner of the Site. All vehicles would be fitted with air brake silencers, rubber tailgate buffers and white-noise proximity beepers (as per the loading shovel).

Processes

The Asphalt Plant will manufacture coated road-stone (asphalt) from a mix of primary and secondary aggregates, as well as RAP which will be combined with bitumen and fillers depending upon the required asphalt mix. RAP will be sourced from the adjoining Aggregate Recycling Plant, and could in some instances comprise 70% of product mixes. At full capacity, maximum output will be up to 300,000 tpa.

The process comprises five main stages:-

(1) Site Storage of Raw Materials.

The majority of aggregates, sand, fillers, bitumen, fuel and various additives necessary for production of asphalt will be brought to Site by sheeted HGVs. Bitumen will be delivered to the Site by delivery tanker and will be drawn directly from the delivery tanker into one of five dedicated bitumen tanks (located within the Asphalt Production Plant) to minimise any risk of spillages.

On-site storage arrangements will be as follows:

- Aggregates, sand and RAP will be stored in 12 box profile clad and covered storage bays each capable of holding up to 1,200 tonnes, of material. Reclaimed and imported fillers including hydrated lime will be stored within three sealed silos located inside the main enclosure of the Asphalt Plant;
- Pigment will be stored within the main plant enclosure in a small 3 m³ hopper with closable lid;
- Bitumen will be stored within five electrically heated vertical tanks, three will hold 80 m³ and the fourth will be split into 2 x 40 m³ held at approximately 160 °C;
- Emulsion will be stored in a 30,000 litre heated tank holding the emulsion at approximately 80 °C. All binder tanks will comply with the refined bitumen association (RBA) safe storage regulations.
- Fuel oil will be stored within a 80,000 litre tank within the main plant enclosure with bunded containment of 110%.
- Diesel fuel will be stored in a 60,000 litre tank with bunded containment of 110%.

(2) Aggregate Feed and Proportioning

Aggregates and sands will be fed independently via a wheeled loading shovel from the storage bays into one of the thirteen three sided and roofed 14 m³ capacity “cold feed” steel storage hoppers; each providing a variable feed onto the transfer conveyor belts feeding the rotary dryer drum. RAP will be similarly fed by loading shovel into the plant but will proceed via an inclined slinger conveyor and elevator to the parallel dryer drum. The walls of the hoppers will be insulated and heated to keep the material at the required temperature.

(3) Heating and Drying

During the production process, the bitumen will be heated by a “high efficiency” automated system. Binder heating will be controlled using a P100 sensor with electric temperature regulator and analogue output for remote readouts. Additional safety thermostats will be installed to monitor the products.

The aggregate will be dried and heated in a sealed steel contra flow rotary dryer which will be 10 m in length by 2.8 m in diameter. This step is required to ensure the aggregate is free from moisture prior to mixing with bitumen and filler. The dryer has a 23,720 kW burner which will be fired on gas oil. Water vapour and exhaust air will pass through the bag filtration plant to be discharged via a 30 m stack and trapped particulates fed back as filler into the process.

A second parallel flow drum dryer, will receive and dry the RAP via a recycle elevator.

(4) Screening, Weighing and Mixing

Heated and dried aggregates discharged from the dryer will be passed via a bucket elevator to the top of the mixing tower to the vibrating screen deck and separated by size, in terms of the recipe mix required and pass into six hot stone bins. The required proportions of aggregate and RAP will be mixed with the bitumen and fillers and transferred to the paddle mixer. The plant will be able to mix up to 3 tonnes per batch. The mixing time is typically no more than 45 seconds per batch.

(5) Mixed Material Storage

The final asphalt product will either be directly loaded out into a waiting HGV below or stored in one of six 80 tonne capacity electrically heated mixed material storage hoppers. From these

the asphalt is directly discharged via overhead doors into an insulated HGV for final dispatch from the plant. HGVs tippers will drive under the plant to a pre-notified hopper. The hopper would then discharge the required amount into the tipping body of the vehicle. The operation is controlled by computer via the plant control room, which will be located in the weighbridge office. All asphalt carrying HGVs will leave the Site sheeted.

Asphalt can be stored in the hot storage bins for up to twelve hours but this depends upon a number of factors including the amount and individual product mix. Any asphalt unused or, returned from site will be recycled on-site at the Aggregate Recycling Plant.

Process Requirements

The Asphalt Plant will be subject to the conditions of a Local Authority Pollution Prevention Control (LAPPC) Permit, issued by LBH. In the case of the Applicant's existing Erith Facility it was the London Borough of Bexley.

The Permit will control all aspects of the operation through a series of enforceable conditions that will specify the acceptable levels of any emission including smoke, moisture, odour or airborne dust. Any breach of these conditions could potentially lead to revocation of the Permit by the Local Authority.

Operating Hours

The Asphalt Plant will operate on a 24/7 basis to meet the needs of service contracts with different London Boroughs and other public and private sector clients.

3.3.3 Gully Waste Recycling Plant

Component Parts

The Gully Waste Recycling Plant comprises a shallow sloping concrete pad (10 x 24 m), filters and two below ground tanks for the treatment and recycling of gully sucker waste and road sweeper waste arising from street cleansing activities. At maximum output, up to 20,000 tpa of waste will be treated and recycled.

Processes

Gully waste treatment is a passive process. As the gully sucker tips up, water will drain through a series of filters, whilst trapping any hydrocarbons, and recovering any solid residue. These residues will be moved from the plant by loading shovel or hydraulic excavator, and processed at the Aggregate Recycling Plant. All water used in the process, will be re-circulated and used again (either by gully suckers or elsewhere on-site).

Any residue that cannot be recycled will be collected and disposed of off-site.

The above process will be subject to the conditions of any waste management license as appropriate, issued by the Environment Agency.

Operating Hours

There will be a requirement for 24/7 availability; however, the gully suckers typically only operate between 06.00-18.00 Monday to Friday and 06.00-14.00 on Saturday.

3.3.4 Cement Silo

The low level cement silo will comprise a 100 tonne capacity, prefabricated steel constructed silo. Cement from the silo will be taken by the Applicant's fleet of volumetric concrete mixer trucks as required, to facilitate the mixing of concrete at the point of use. No concrete will be

produced on-site. The operation and maintenance of the cement silo will be governed by the terms of an LAPPC issued by LBH.

3.3.5 Concrete Washout Bay

The proposed Concrete Washout Bay, or settlement bay, will be used to wash down volumetric concrete mixers at the end of each working day. Through a system of weirs, the water will be recycled for re-use and residues will be removed for re-processing in the Aggregate Recycling Plant. The use of the Concrete Washout Bay will be subject to the conditions of a LAPPC Permit or Discharge Licence as may be deemed appropriate, by the Local Authority or Environment Agency.

3.3.6 Term Maintenance Yard

The Term Maintenance Yard will comprise the following:

- Open storage of plant, equipment and materials such as paving slabs, setts, lighting, street furniture etc.;
- Low-level enclosed storage of plant equipment and material items such as power tools, PPE, high value items and items requiring inside storage;
- Vehicle parking; and
- Security fencing.

3.3.7 Welfare Facilities

Up to six Portacabin style units will be provided along the perimeter of the Site to provide changing, washing, toilet, drying and seating areas.

3.3.8 Office Buildings

Two buildings will be provided on-site:

- Two storey weighbridge office from where site access and plant control will take place.
- Three storey administrative office that will provide for general site and contract management and control.

3.3.9 Ancillary Components

The following ancillary components will be provided within the Proposed Development:

- Service supply cabins/buildings including brick constructed substations;
- Two surface mounted 50 tonne capacity weighbridges (15 x 3 m) located on either side of the Weighbridge Office;
- Up to 70 car parking spaces for employees/visitors beneath the A312 Parkway flyover;
- Up to 50 HGV parking spaces;
- Fuel storage tanks;
- Up to four water tanks, each with 60,000 litre capacity;
- Recycling skips and waste bins;
- CCTV;
- Site lighting (in accordance with lighting strategy to be developed post consent); and
- Landscaping.

3.4 Proposed Development Appearance

3.4.1 Massing and Scale

The scale and massing of proposed buildings and structures are dictated by standard plant and process requirements, although a reduction in the height of the Asphalt Plant has been achieved during the design process by separating the proposed storage facility from the main production plant. This will limit visual impact considerably.

The principal elements of the proposal will range from 7.55 to 27.8 m as shown in Figure 3.2 and outlined in Table 3.1.

Table 3.1: Proposed Development Built Heights	
Plant Component	Height above Finished Site Level
Aggregate Recycling Plant	9.5 and 10.4 m
Asphalt Plant	27.8 m
Asphalt Stack	30.0 m
Asphalt Storage Facility	20.0m
Aggregate Storage Bays	9.5 m
Office Buildings	Weighbridge Office 7.55m Admin Office 11.4m
Cement Silo	6 m
Welfare Facilities	Single storey 3m, stacked two storey 6 m
Water Storage Tanks	Up to 6 m and 4 m diameter
Acoustic Boundary Treatment	Up to 7 m

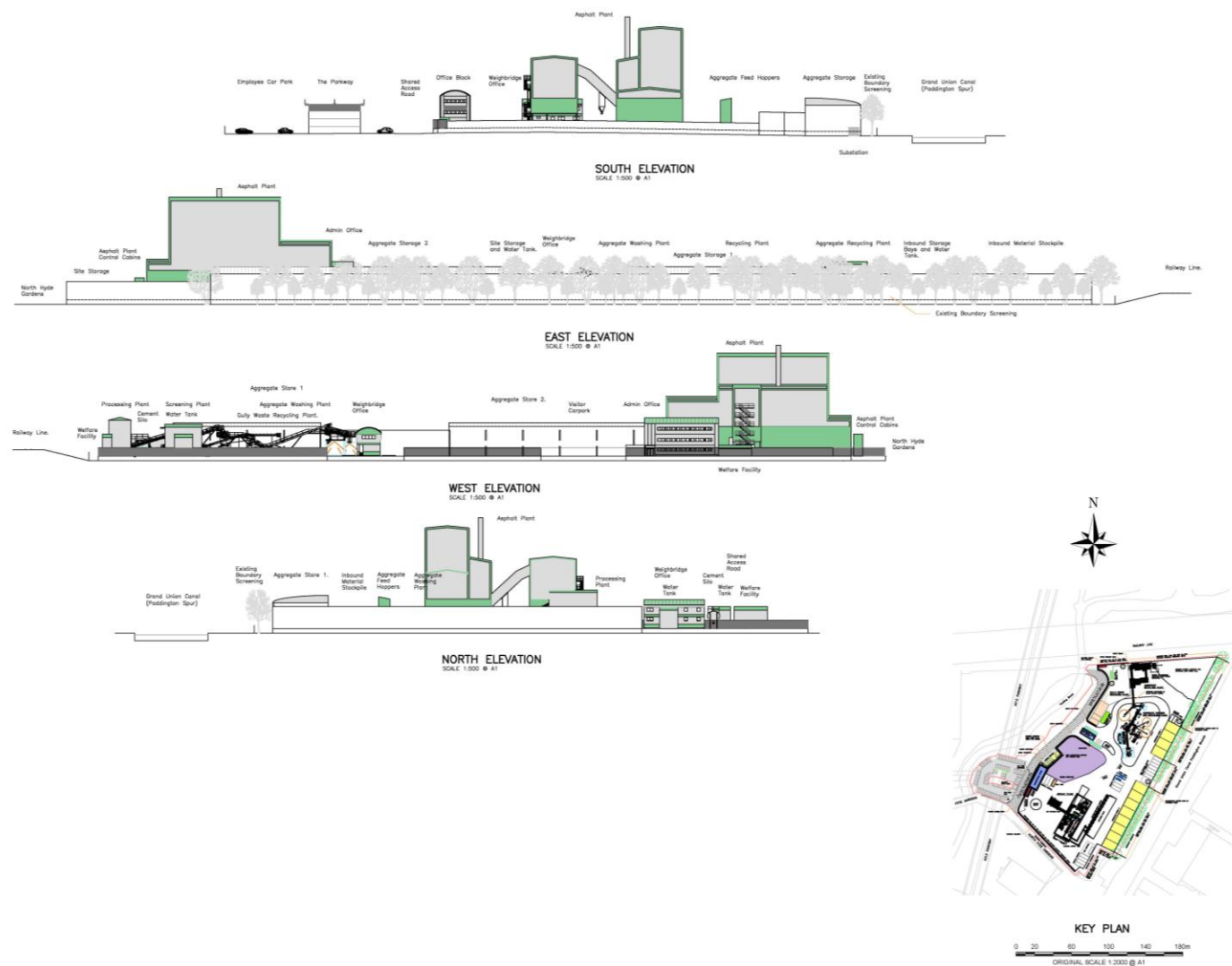


Figure 3.2: Proposed Development Elevations

3.4.2 Materials and Finishes

Foundations will comprise standard spread foundations and where necessary Continuous Auger Piling (CFA) piling, which is recognised as a quiet and vibration free method of construction.

Buildings will be steel frame constructed with holorib decking and concrete structural floors. Exterior finishes will be similar to that adopted at the Applicant's Erith and Dartford Facilities and therefore will comprise:

- proprietary metal composite roof panels with an approximate 5 degree duo pitch;
- non-combustible metal profiled panel system cladding, finished with a coloured PVC coating; and
- ventilation louvres at various external locations, which will be finished with a coloured polyester powder coating or standard paint finish.

The colour coding of the building elevations will comprise goose wing grey and Conway green. The same coding would be applied to welfare facilities and storage containers.

Process Plant will be fully enclosed and will comply with the noise limits prescribed in the Proposed Development's Noise and Vibration Impact Assessment.

3.4.3 Landscaping and Biodiversity Enhancements

Landscaping and biodiversity enhancement proposals will comprise the following:

- a 1 m wide strip of ivy planting along the northern Site boundary;
- a 1m wide strip of ivy planting along the eastern Site boundary, in addition to approximately 4 m of native woodland understorey shrub, ground layer planting and twining plants (on the existing chain link fence);
- two new semi mature maple trees along the eastern Site boundary to complete the existing row;
- 2 - 5 m wide terrace planting on the south-eastern Site boundary with native thicket planting and specimen trees;
- 2 m wide planting on the southern and south-western Site boundary with native thicket planting and specimen trees;
- native thicket planting in the car parking area, as well as the western boundary along the Yeading Brook with ground cover planting and occasional trees, space permitting;
- living roofs (brown roofs) on the two aggregate storage bay;
- timber cladding to the perimeter acoustic wall where appropriate; and
- bird and bat boxes within the existing woodland.

In total an area of approximately 3,000 m² will be landscaped, whilst up to 1,200 m² will be provided as living (brown) roofs.

4 F M Conway Ltd Approach to Sustainability

4.1 Introduction

The Applicant is a leading infrastructure services company delivering vital services in transportation, the built environment and open spaces for communities and business. As such, it inspects, designs, builds, produces, enhances and maintains essential infrastructure and community services.

A key aim of the company is to achieve the widest possible economic, environmental and social benefits for the clients and communities it serves. It therefore continuously explores and invests in award winning and innovative solutions to increase production capability, reduce carbon footprinting and minimise waste to landfill.

Key performance data from the Applicant's Recycling Business for the period 2009-2011 is presented in Figure 4.1.

CO ₂ Savings from Recycling of Aggregates	2009/10	2010/11
CO ₂	5,914,143.95 kg	6,672,273 kg
Equivalent to	246,423 trees	278,011 trees



Results	2009-10 Data	2010-11 Data
Highway Arisings Recycled – Dartford	190,357 tonnes	199,996 tonnes
Highway Arisings Processed - Erith	14,969 tonnes	30,820 tonnes
Asphalt Planings stockpiled for future recycling	38,759 tonnes	13,452 tonnes
Gully Waste recycled through Drainage Treatment Plant	14,421 tonnes	17,120 tonnes
Metals Recycled	141 tonnes	135 tonnes
Plastics, Timber, Paper and cardboard recycled	358 tonnes	372 tonnes
Hydrocarbons recycled	396 tonnes	451 gallons
Gullies emptied and recycled	1,004,017 gullies	650,000 gullies
With water recycled 1/t@ 50% water x 1,000	7,210,575 litres	7,140,537 litres
Vehicle Miles Reduction	316,461 vehicle miles	357,028 vehicle miles

Figure 4.1: F M Conway Recycling Performance Data

The aim of the Proposed Development at Bulls Bridge is to better serve the Applicant's Local Authority clients in West London.

Once operational, the Proposed Development will allow for the re-use and recycling of up to 300,000 tonnes of pavement arisings from infrastructure services per year which will otherwise be landfilled. In addition, the strategic location of the Site will enable the Applicant to potentially reduce existing road transport of waste and recycled products across London by approximately 20%.

The Applicant already uses water transport. At the Erith asphalt plant, nearly all virgin aggregates are brought in via ship and unloaded via the Applicant's private jetty which has a design capacity up to 6000 tonne cargoes. The Applicant will continue to assess the feasibility of using the adjoining canal network at the Proposed Development site at Bulls Bridge for future freight movements.

The Applicant has an objective to recycle 100% of recovered arisings from construction and service operation and achieve 'zero to Landfill'.

In recognition of the Applicant's exemplary sustainability achievements, the Construction Recycling Alliance awarded FM Conway Ltd the 'Recycling Company of the Year for 2011' award. This is the latest of the Applicant's numerous industry awards in recent years recognising health and safety and sustainability achievements, and excellence, innovation and best practice in Highways.

4.2 Recycling

There has been a wealth of Government initiatives to reduce waste and increase recycling over the last decade. These include the introduction of the Landfill Tax and, in relation to aggregates recycling, the Aggregate Levy. In December 2003, a new European Standard - BS EN206-1 was introduced which allows recycled aggregates to be used in concrete production. Recently introduced European Standards also now permit the use of large percentages of road planings in bituminous materials.

The Applicant has responded by pioneering recycling of both highway arisings (concrete, asphalt, sub-base, kerbs, paving etc.) and of drain gully waste achieving both environmental benefits and ensuring quality recycled products.

Using unique static processing, washing and grading plants, the Applicant recovers a minimum of 95% of all arisings as reusable aggregates. It is then reused or recycled as sub base, capping, aggregate, type1, type 4 or in concrete or as recycled asphalt products used in asphalt (coated road-stone manufacture).. Most materials go back to the sites from which the material first arose. The concept of processing arisings to manufacture usable aggregate is not a new one. However, the Applicant has developed a system which enables other waste streams to be included and add value to the process.

The processing equipment at the Applicant's Dartford Facility is at the forefront of technology and has been designed to limit dust, noise (and vibration emissions, incorporating best design and operating practices to meet all noise and air quality standards/LAPPC Permits. These innovations ensure minimum environmental and social impacts, and delivers enhanced working conditions. The same type of processing equipment is proposed to be installed at Bulls Bridge.

As stated above, the proposed technology ensures processed material reach stockpiles with very little need for further dust suppression. Nevertheless water spray technology and road sweepers are used at the Applicant's existing facilities and will be replicated at Bulls Bridge where rainwater harvesting opportunities are also being explored.

The Applicant's state of the art asphalt plant at Erith is capable of recycling all waste asphalt and road planings (combined together as Recycled Asphalt or RAP) back into bituminous pavement construction material. At the Proposed Development, RAP will be used in the Asphalt Plant. The amount of RAP used in the Asphalt Plant depends upon the required product mix but the Applicant will look to maximize this at every opportunity.

4.3 Future Recycling

The Applicant is investigating the reuse of silt, a by-product of the aggregate washing process, as an agricultural 'field spread' product, to neutralise soils and as a filter in stabilised soils.

5 Sustainability Appraisal Approach

5.1 Introduction

The SA methodology comprised a detailed policy review of current and emerging national, regional and local sustainability policy to provide a specific policy context for the assessment of the Proposed Development.

A thorough examination of the Mayor's SDC SPG formed a particular important element of this exercise and informed the design and content of a bespoke 'sustainability framework', which in turn provided the project team with a set of objectives and targets to take forward in the design process of the Proposed Development.

The framework fully encompasses, and is structured around the eight sustainability issues contained within the SDC SPG checklist (as listed in Section 1.3).

5.2 Policy Context

The following key documents were reviewed:

National and Regional Policy:

- National Planning Policy Framework (March 2012);
- Building Regulations Part L: Conservation of Fuel and Power (2010);
- The London Plan (July 2011); and
- Sustainable Design and Construction Supplementary Planning Guidance (May 2006).

Local Policy:

- London Borough of Hillingdon Unitary Development Plan (adopted 1998) and saved policies 27th September 2007;
- Core Strategy Pre-Submission version (February 2011) and proposed changes (October 2011); and
- Southern Hillingdon Area Action Plan.

Good Practice Guidance:

- BREEAM New Construction 2011: Technical Manual (July 2011);
- Adapting to Climate Change: A Checklist for Development. Guidance on designing developments in a changing climate (Three Regions Climate Change Group, 2005); and
- The Waste Resources Action Programme (WRAP) Recycled Content Toolkit.

5.3 Key National and Regional Policy

The National Planning Policy Framework, 2012

The NPPF sets out the Government's economic, environmental and social planning policies for England and attempts to summarise in a single document all previous national planning policy advice (Planning Policy Statements and Planning Policy Guidance notes). Taken together, these policies articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations.

The basis of the NPPF is a presumption in favour of sustainable development, which should be pursued, amongst others, by seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life.

For decision-making this means “*approving development proposals that accord with the development plan without delay; and where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole*”.

The London Plan – Spatial Development Strategy for Greater London, 2011

The London Plan¹ is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The following London Plan policies are of relevance to the Proposed Development:

- Policy 5.2 - Minimising Carbon Dioxide Emissions: Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:

1. Be lean: use less energy
2. Be clean: supply energy efficiently
3. Be green: use renewable energy

The Mayor will work with boroughs and developers to ensure that major developments meet the target for non-domestic buildings: 25% improvement on 2010 Building Regulations 2010 – 2013. The Government’s aim is to achieve zero carbon new non-domestic buildings from 2019.

Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy.

- Policy 5.3 - Sustainable Design and Construction: Development proposals should demonstrate that sustainable design standards are integral to the proposal and should meet the standards outlined in the SDC SPG which include the following principles:
 - Minimising carbon dioxide emissions;
 - Efficient use of natural resources including making the most of natural systems both within and around buildings;
 - Minimising pollution (including noise, air and water run-off);
 - Minimising the generation of waste and maximising reuse and recycling; and
 - Promoting and protecting biodiversity and green infrastructure.
- Policy 5.7 - Renewable Energy: The Mayor will seek to increase the proportion of energy generated from renewable sources, and expects that the projections for installed renewable energy capacity outlined in the Climate Change Mitigation and Energy Strategy and in supplementary planning guidance will be achieved in London. Within the framework of the energy hierarchy (see Policy 5.2), major development proposals should provide a reduction in expected carbon dioxide emissions through the use of on-site renewable energy generation, where feasible.
- Policy 5.8 - Innovative Energy Technologies: The Mayor will support and encourage the more widespread use of innovative energy technologies to reduce use of fossil fuels and

¹ Greater London Authority, 2011. The London Plan – Spatial Development Strategy for Greater London. Greater London Authority.

carbon dioxide emissions. In particular the Mayor will seek to work with boroughs and other partners by, for example, stimulating:

- a. the uptake of electric and hydrogen fuel cell vehicles;
 - b. hydrogen supply and distribution infrastructure; and
 - c. the uptake of advanced conversion technologies such as anaerobic digestion, gasification and pyrolysis for the treatment of waste.
- Policy 5.9 - Overheating and Cooling: The Mayor will seek to reduce the impact of the urban heat island effect in London and will encourage the design of places and spaces to avoid overheating and excessive heat generation.

Major development proposals should reduce potential overheating and reliance on air conditioning systems and demonstrate this in accordance with the following cooling hierarchy:

1. minimise internal heat generation through energy efficient design;
2. reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls;
3. manage the heat within the building through exposed internal thermal mass and high ceilings;
4. passive ventilation;
5. mechanical ventilation;
6. active cooling systems (ensuring they are the lowest carbon options).

Major development proposals should demonstrate how overheating will be minimised and cooling needs are met. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible.

- Policy 5.11 - Green Roofs and Development: Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible, to deliver as many of the following objectives as possible:
 - a. adaptation to climate change (i.e. aiding cooling);
 - b. sustainable urban drainage;
 - c. mitigation of climate change (i.e. aiding energy efficiency);
 - d. enhancement of biodiversity;
 - e. accessible roof space;
 - f. improvements to appearance and resilience of the building; and
 - g. growing food.
- Policy 5.12 - Flood Risk Management: Development proposals must comply with The flood risk assessment and management requirements set out in Planning Policy Statement 25 (now replaced by the NPPF) over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100) and Catchment Flood Management Plans.
- Policy 5.15 - Water Use and Supplies: The Mayor will protect and conserve water supplies and resources, by amongst others:
 - minimising use of mains water;
 - in conjunction with demand side measures, promoting the provision of additional sustainable water resources in a timely and efficient manner, reducing the water supply deficit and achieving security of supply in London;
 - minimising the amount of energy consumed in water supply; and

- promoting the use of rainwater harvesting and using dual potable and grey water recycling systems, where they are energy and cost-effective.
- Policy 5.16 - Waste Self-Sufficiency: The Mayor will work towards:
 - managing as much of London's waste within London as practicable, working towards managing the equivalent of 100% of London's waste within London by 2031; and
 - creating positive environmental and economic impacts from waste processing; and
 - zero biodegradable or recyclable waste to landfill by 2031.
- Policy 5.17 - Waste Capacity: Proposals for waste management should be evaluated against criteria including the:
 - suitability of the location;
 - nature and scale of the activity proposed;
 - carbon benefits of the proposals; and
 - environmental impacts (noise, odour, water resource, transport visual impact).
- Policy 5.18 - Construction, Excavation and Demolition Waste: New construction, excavation and demolition (CE&D) waste management facilities should be encouraged at existing waste sites, including safeguarded wharves, ensuring that major development sites are required to recycle CE&D waste on-site, wherever practicable. Waste should be removed from construction sites, and materials brought to the site, by water or rail transport wherever that is practicable.
- Policy 5.20 - Aggregates: The Mayor will work with all relevant partners to ensure an adequate supply of aggregates to support construction in London. This will be achieved by (among other actions) encouraging re-use and recycling of construction, demolition and excavation waste within London.

The Mayor will work with strategic partners to achieve targets of:

- a. 95 % recycling/re-use of construction, demolition and excavation waste by 2020; and
- b. 80 % recycling of that waste as aggregates by 2020.

To reduce the environmental impact of aggregates, Local Development Frameworks (LDFs) should:

- safeguard wharves and/or railheads with existing or potential capacity for aggregate distribution;
- minimise the movement of aggregates by road and maximise the movement of aggregates via the Blue Ribbon Network; and
- develop policies that support the protection and enhancement of aggregates recycling facilities.
- Policy 5.21 - Contaminated Land: The Mayor supports the remediation of contaminated sites and will work with strategic partners to ensure that the development of brownfield land does not result in significant harm to human health or the environment, and to bring contaminated land to beneficial use.

The adopted London Plan identifies Hays as a strategic industrial location. In addition, the London Plan's Heathrow Opportunity Area includes the Hays-West Drayton Corridor in which the Site is located.

In June 2012, the Mayor published revised early minor alterations to the London Plan aimed at ensuring that the London Plan is fully consistent with the NPPF. The revised early minor

alterations document also incorporates the early minor alterations issued for consultation in February 2012. It is anticipated that both sets of alterations will be considered together by an independent planning inspector at an examination in public (EiP) to be held in November/December 2012.

5.4 Key Local Policy

London Borough of Hillingdon Unitary Development Plan (adopted 1998)

The London Borough of Hillingdon Unitary Development Plan (UDP) and the saved policies of 27th September 2007 form the current planning policy framework for the Proposed Development. The policies which are relevant to the proposed Development have been identified below and have been used to inform the SA.

The five guiding principles which form the basis for the UDP policies and proposals are to:

- maintain and improve the environment;
- meet community needs;
- maintain a strong local economy;
- provide access to opportunities for all residents; and
- reduce travel demand.

The Paddington Branch of the Grand Union Canal borders the Site to the east and is identified as a green chain. Therefore policies OL11 in respect of Green Chains and BE32 for proposals for development adjacent to or having a visual effect on the grand union canal should be considered with respect to the public access, nature conservation and recreation requirements, as well as the conservation/enhancement of the role of the canal and its surrounds.

The canal is also designated as a Nature Conservation Site of Metropolitan Important Nature Conservation, whilst Minet Country Park to the north of the Site is designated as a Borough Grade 1 Site of Importance for Nature Conservation. A number of records of protected or UK Biodiversity Action Plan (BAP) priority species have been recorded here. Therefore policies relating to the protection and enhancement of sites designated for their ecological value (EC1, EC2, EC3, EC5, and EC6), may be of relevance.

Other policies which are likely to have an influence on the sustainability performance of the Proposed Development include:

- Damaged, derelict and otherwise degraded land (OL21 and OL22);
- The protection of trees and woodlands (OL26);
- Design, layout and relationship with surrounding land uses (BE13, BE14, BE18, BE25, BE35 and OE1);
- Potential noise pollution (OE3 and MIN23); and
- Flood risk (OE7 and OE10).

Policies with a more economic focus which relate to the sustainability of the Proposed Development include:

- Contribution to regeneration, availability and capacity of existing public transport and road systems, land demand and accessibility (LE1);
- Planning benefits (LE7); and
- Waste management (MIN16).

Draft London Borough of Hillingdon Local Development Framework, 2012

The LBH LDF comprises a suite of development planning documents including the Core Strategy and Development Management Plan Policies. The Core Strategy was submitted to the Secretary of State on 31st October 2011 and an independent Inspector has been appointed to conduct the EiP which commenced on 13th March 2012. The Core Strategy is expected to be adopted later in 2012.

The Core Strategy Pre-Submission version (Feb 2011) and proposed changes (Oct 2011) is not currently adopted policy but it provides an indication of the Council's current expectations with regards to the sustainability performance of new development.

The Core Strategy sets out the vision, strategic objectives, spatial strategy and policies for the spatial development of the borough over the next 15 years. Strategic Objectives relevant to the Proposed Development include:

- SO1: Conserve and enhance the Borough's heritage and their settings by ensuring new development, including changes to the public realm, are of high quality design, appropriate to the significance of the heritage asset, and sensitive to the wider historic environment.
- SO2: Create neighbourhoods that are of a high quality sustainable design, that have regard for their historic context and use sustainability principles which are sensitive and responsive to the significance of the historic environment; are distinctive, safe, functional and accessible; and which reinforce the identity and suburban qualities of the borough's streets and public places, introduce public art to celebrate civic pride and serve the long-term needs of all residents.
- O3: Improve the quality of, and accessibility to, the heritage value of the borough's open spaces, including rivers and canals as areas for sports, recreation, visual interest, bio-diversity, education, health and wellbeing.
- SO4: Ensure that development contributes to a reduction in crime and disorder, is resilient to terrorism, and delivers safe and secure buildings, spaces and inclusive communities.
- SO8: Protect and enhance biodiversity to support the necessary changes to adapt to climate change. Where possible, encourage the development of wildlife corridors.
- SO10: Improve and protect air and water quality, reduce adverse impacts from noise including the safeguarding of quiet areas and reduce the impacts of contaminated land.
- SO11: Address the impacts of climate change, and minimise emissions of carbon and local air quality pollutants from new development and transport.
- SO12: Reduce the reliance on the use of the car by promoting safe and sustainable forms of transport, such as improved walking and cycling routes and encouraging travel plans.
- SO13: Support the objectives of sustainable waste management.
- SO14: Provide 9,000 new jobs and accommodate most economic growth in Uxbridge and the Heathrow Opportunity Area.

Core Policies of relevance to the Proposed Development are:

- Policy BE1: Built Environment' which states that LBH "...will require all new development to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods, where people enjoy living and

working and that serve the long-term needs of all residents.” It goes on to state that in respect of the Proposed Development, it should:

- achieve a high quality of design in all new buildings and new public realm to enhance the local distinctiveness of the area, to contribute to community cohesion and to a ‘sense of place’;
 - seek to protect the amenity of surrounding land and buildings;
 - improve areas of poorer environmental quality;
 - improve the quality of the public realm with proposals that respect the local character and landscape, enhance and protect biodiversity through the inclusion of living walls, roofs and areas for wildlife;
 - create safe and secure environments that reduce crime and fear of crime, anti-social behaviour and risks from fire and arson having regard to Secure by Design standards and address resilience to terrorism in major development proposals.
 - be able to demonstrate compliance with the prevailing energy reduction requirements set out in the London Plan. Where the required reduction from on-site renewable energy is not feasible within major developments, contributions off-site will be sought.
- Policy EM1: Climate Change Adaptation and Mitigation’ which encourages sustainable techniques to land remediation to reduce the need to transport waste to landfill and encourages the installation of renewable energy for all new development in meeting the carbon reduction targets savings set out in the London Plan. The policy also seeks adaptation measures including locating and designing development to minimise the probability and impacts of flooding, consideration of the whole water cycle impact, giving preference to development of previously developed land, promoting the use of living walls and roofs, alongside sustainable forms of drainage to manage surface water run-off and increase the amount of carbon sinks and promoting the inclusion of passive design measures to reduce the impacts of urban heat effects.
 - Policy EM3: Blue Ribbon Network’ which states that LBH will continue to promote and contribute to the positive enhancement of the strategic river and canal corridors through the Biodiversity Action Plan, the Thames River Basin Management Plan, and developer contributions where appropriate. The Council will work with partners, adjacent local authorities and interested bodies to enhance the local character, visual amenity, ecology, transportation, leisure opportunities and sustainable access to rivers and canals.
 - Policy EM4: Open Space and Informal Recreation’ which states amongst others that LBH will seek to protect existing tree and landscape features and enhance open spaces with new areas of vegetation cover (including the linking of existing fragmented areas).
 - Policy EM6: Flood Risk Management’ states that LBH “...will require new development to be directed away from away from flood zones 2 and 3 in accordance with the principles of Planning Policy Statement 25 [now replaced by the NPPF]. The subsequent Site Allocations DPD will be subjected to the Sequential Test in accordance with PPS25. Sites will only be allocated within flood zones 2 or 3 where there are overriding issues that outweigh flood risk. In these instances, policy criteria will be set requiring future applicants of these sites to demonstrate that flood risk can be suitably mitigated. The Council will require all development across the borough to use sustainable urban drainage systems (SUDS) unless demonstrated that it is not viable. The Council will encourage SUDS to be linked to water efficiency methods.”

- Policy EM7: Biodiversity and Geological Conservation' which states that LBH will protect and enhance all Sites of Importance for Nature Conservation, in particular Sites of Metropolitan and Borough Grade I importance.
- Policy EM8: Land, Water, Air and Noise Quality' which states that LBH will seek:
 - to safeguard and improve both ground and surface water quality, with priority given to the Yeading Brook amongst others.
 - of all major development within the Air Quality Management Area to demonstrate air quality neutrality where appropriate; and
 - to promote the maximum possible reduction in noise levels and to minimise the number of people potentially affected.
- Policy EM11: Sustainable Waste Management which states that LBH will aim, in conjunction with local partners, to reduce the amount of waste produced in the borough.

Until the Core Strategy is adopted, the UDP saved policies still apply and take precedence over the draft Core Strategy policies.

Southern Hillingdon Area Action Plan

The Southern Hillingdon Area Action Plan (AAP), forms part of the emerging Hillingdon LDF and provides locally specific policy guidance for future development.

Nine distinct areas are identified including the Central Corridor, Green Belt and Suburban Heartland. The Site is located within the Central Corridor which is described as:

- extending from Yiewsley/West Drayton/Hayes in the west to Bulls Bridge/Southall in the east;
- comprising a traditional industrial area designated as a strategic employment location/preferred industrial location;
- comprising a wide range of industrial activities with B8 storage and distribution activities accounting for 29% of floorspace;
- including the Grand Union Canal which offers the potential for regeneration; and
- including the Bulls Bridge site which is identified as an opportunity site.

Policy SHSA 7 specifically considers the Bulls Bridge Site Allocation and states that the three types of development will be deemed acceptable:

- Recycling centre;
- Distribution facility; and
- Renewable energy installation.

5.5 Key Performance Indicators

The SDC SPG provides a framework for assessing sustainable development against a number of sustainability principles and therefore provides more detailed guidance for Local Planning Authorities within London on how to implement the London Plan policies. The framework sets various essential standards that must apply to all London's buildings and are a minima based on current Building Regulations, the targets set out in the Mayor's strategies, local policy and current good practice. The SPG also has a second tier of Mayor's preferred standards which indicate more exemplary approaches that can be followed but are not yet policy requirements. These form the project Key Performance Indicators (KPIs) for the Proposed Development.

Table 5.1 sets out the KPIs for the Proposed Development. Standards which relate to residential development (shown in grey) have not been considered in the assessment as they are not relevant to the Proposed Development. A reference code has been given to each KPI. The 'E' or 'P' prefixing the code identifies the KPI as being an essential or preferred standard, respectively, under the SDC SPG. The Proposed Development has been assessed against these KPIs and relevant local policy set out in Appendix A. The results of the assessment are presented in Section 6.

Table 5.1: Proposed Development Key Performance Indicators	
London SPG Standard / Bulls Bridge KPIs	
Ref	Re-use of Land
E1.1	100% of the development is on previously developed land
E1.2	Development density should be maximised based on local context, design principles, energy efficiency, open space provision, public transport capacity and provision of a good range of house types and sizes.
E1.3	Existing buildings are re-used where practicable
P1.4	A proportion of the new roof space is used for outdoor space, green roofs or renewable energy
Ref	Natural Systems
E2.1	The development follows the principles of good design set out by London Plan Policy 4B.1
E2.2	The need for mechanical ventilation, heating and cooling systems is minimised
E2.3	Buildings provide for flexibility during their projected operational lives
E2.4	Buildings mitigate for the effects of the urban heat island and the expected increases in hot dry summers and wet mild winters
E2.5	Facilities for bicycles and electric vehicles are provided
Ref	Energy
E3.1	An energy demand assessment is prepared
E3.2	Maximise energy efficiency
E3.3	Consideration has been given to the ranking method for heating and where necessary cooling systems: Passive design; then Solar water heating; then CHP for heating and cooling (i.e. tri-generation) , preferably fuelled by renewables; then community heating and cooling; then heat pumps; and then gas condensing boilers
P3.4	Supply energy efficiently and incorporate decentralised energy systems, and use renewable energy where feasible
E3.5	100% outdoor lighting should be energy efficient, minimizing light lost to sky
P3.6	Wherever outdoor lighting or other electrically powered street furniture is proposed on site, it should be solar powered and minimise light lost to the sky
E3.7	Carbon emissions from the total energy needs are reduced by 10% by the on-site generation of renewable energy
P3.8	Major developments should be zero carbon emission developments
P3.9	Services will operate efficiently under different loadings

Table 5.1: Proposed Development Key Performance Indicators**London SPG Standard / Bulls Bridge KPIs**

P3.10	Contribution to London's hydrogen economy
Ref	Materials
P4.1	No material with high embodied impact will be used in construction or specification. 3 of the key building elements to achieve Green Guide rating A+ to D.
E4.2	> 50% of timber from FSC (or a CPET) and balance from temperate sources
P4.3	> 90% of structural timber from FSC (or a CPET) and balance from temperate sources
P4.4	No peat or natural weathered limestone will be used in buildings or landscaping
E4.5	No insulation materials containing substances that contribute to stratospheric ozone depletion or with Global Warming Potential will be used
P4.6	Before demolition, appraisal by use of ICE's Demolition Protocol
P4.7	50% (by mass) of construction materials will be sourced within 35 miles of site
E4.8	A strategy to minimise new aggregates has been prepared
P4.9	10% total value of materials used will be derived from recycled and reused content
Ref	Water
E5.1	Average water use equals 110 litres/head/day
P5.2	Average water use less than 70 litres/head/day
E5.3	100% of newly built property will have a water meter
P5.4	Use of greywater for all non potable uses
Ref	Pollution
E6.1	Adverse impacts of noise have been minimised, using measures between source and receptor in preference to sound insulation at the receptor
P6.2	Achieve 'good' internal noise levels for external to internal noise transmission, and improve on Building Regulations by 5 dB for internal sound transmission
E6.3	All new gas boilers should produce low levels of NO _x
E6.4	Take measures to reduce and mitigate exposure to air pollution
P6.5	Low emission development that minimizes air quality impact of plant, vehicles and other sources
E6.6	Use Sustainable Drainage Systems (SUDS) measures, wherever practical
E6.7	50% attenuation of the undeveloped sites' surface water run off at peak time
P6.8	100% attenuation of the undeveloped sites' surface water run off at peak time
E6.9	Mitigate any negative impact on the microclimate of existing surrounding public realm and buildings to meet the Lawson criteria for wind comfort and safety.
Ref	Comfort
E7.1	Inert and low emission finishes, construction materials and carpets and furnishings used where practical

Table 5.1: Proposed Development Key Performance Indicators**London SPG Standard / Bulls Bridge KPIs**

P 7.2	Design buildings for indoor comfort of users.
E7.3	All plant and machinery should be accessible for easy maintenance
E7.4	All developments meet the principles of inclusive design, adopting the principles of SPG 'Accessible London: Achieving an Inclusive Environment'
E7.5	100% of dwellings meet Lifetime Homes standard and 10% of dwellings meet wheelchair accessibility standards or are easily adaptable
P7.6	All development is designed to meet wheelchair accessibility standards or be easily adaptable
P7.7	Developments are e-enabled
E7.8	Principles of 'Secure by Design' have been used to develop the design
Ref	Natural Environment
E8.1	No net loss of public open space
P8.2	A net gain in public open space
E8.3	New public open space is created in an area of deficiency
E8.4	No net loss of biodiversity and access to nature
P8.5	A net gain in biodiversity and access to nature
E8.6	Reduction in areas of deficiency in access to nature
Ref	Waste
E9.1	Minimise, reuse and recycle demolition waste on site where practical
E9.2	Specify use of reused or recycled construction materials
E9.3	On site recycling facilities for >35% of household waste
P9.4	On site recycling facilities for >60% of household waste by 2015.
E9.5	Recycling facilities are on-site and as easy to access as waste facilities
P9.6	Provide facilities to recycle 70% of commercial and industrial waste by 2020
E9.7	Recycling facilities should be as easy to access as waste facilities
P9.8	Prefabricated and standardised modulation components will be specified
P9.9	Incorporation of or access to new waste recovery facilities
Ref	Construction
E10.1	Reduce waste during demolition and construction, and sort waste stream on site where practical
E10.2	Reduce the risk of statutory nuisance to neighbours through site management
E10.3	Developers comply with London's BPG on the control of dust and emissions during demolition and construction
P10.4	Contractors comply with London's BPG on the control of dust and emissions during demolition and construction

Table 5.1: Proposed Development Key Performance Indicators**London SPG Standard / Bulls Bridge KPIs**

E10.5	Compliance with protected species legislation
E10.6	Developers sign up to a Considerate Constructors Scheme
P10.7	Contractors sign up to a Considerate Constructors Scheme

The targets within the SDC SPG have been supplemented with local policy and other good practice where relevant to inform the 'framework' for the Proposed Development, which is provided in full in Appendix A.

Minimum, good and best practice has been judged in the following way:

- minimum performance is compliance with essential standards in the SPG and compliance with local planning policy;
- good performance represents compliance with the preferred standards within the SPG;
- best performance represents going beyond the preferred standards or demonstrating innovative technology or approaches.

5.6 Design Workshop

A sustainable design workshop was held with the design team on the 19th June 2012. The purpose of the workshop was to establish sustainability objectives for the Proposed Development in the context of the Mayor's SDC SPG and other local sustainability objectives, gain a variety of perspectives and knowledge from specialists within the design team, and identify the measures that will be incorporated into the Proposed Development to maximise sustainability. Actions were identified at the workshop, such as inclusion of information within the Design and Access Statement, for subsequent follow-up. Further discussion followed between the sustainability consultants and members of the design team as the design progressed.

5.7 Contributing Documents

In addition to the design workshop, a number of technical reports that will accompany the planning application have informed to the findings of this report, including:

- ENVIRON UK Ltd (May, 2011) EIA Screening Request;
- ENVIRON UK Ltd (August, 2012) Ecology Assessment;
- ENVIRON UK Ltd (August, 2012) Energy Statement;
- ENVIRON UK Ltd (August, 2012) Drainage Assessment;
- ENVIRON UK Ltd (August, 2012) Land Remediation Strategy;
- ENVIRON UK Ltd (August 2012) Air Quality Assessment;
- ENVIRON UK Ltd (August 2012) Noise and Vibration Impact Assessment;
- WSP (August, 2012) Transport Assessment;
- WSP (August, 2012) Workplace Travel Plan; and
- WSP (August 2012) Flood Risk Assessment.

5.8 Measuring Sustainability

Table 5.2 shows the traffic light colour scheme which have been used to indicate the Proposed Development's performance against the applicable KPIs, in Section 6.

Table 5.2: Deliverable Progress	
	Target exceeded
	Target achieved / or evidence provided that the target would be achieved
	Commitment to achieve target
	Achievement of target uncertain, but there is a commitment to investigate further.
	Target is not / would/cannot be achieved
	Not applicable

The performance of the Proposed Development against the KPIs is presented in Section 6. Section 6 also includes discussion on how the Proposed Development achieves the requirements of relevant local policies.

6 Proposed Development Sustainability Performance

Table 6.1 outlines the results of the Proposed Development's SA against the selected KPIs.

Table 6.1: Proposed Development Sustainability Appraisal			
1.0 Re-use of Land			
Ref	KPI	Progress	Explanation of Assessment
E 1.1	100% of the development is on previously developed land		The Site is brownfield having been previously operational as a Powergen site, a fuel storage facility for the nearby Bulls Bridge Power Station and a creosote works. The Site has been vacant for many years (according to the Property Search Report, the Site was cleared sometime between 1999 and 2006). The Proposed Development will bring the Site back to beneficial use. This complies with UDP Policy OL21.
E 1.2	Development density should be maximised based on local context, design principles, energy efficiency, open space provision, public transport capacity and provision of a good range of house types and sizes.		This standard is not directly relevant to the Proposed Development. The Proposed Development will not make use of a town centre site which might be suitable for a high density residential/mixed use development and is therefore in compliance with Draft Core Strategy Policy EM1. The Site is located within an Industrial and Business Area and Policies LE1 and LE2 of the Hillingdon UDP seek to retain land within these areas for B1, B2, B8 and appropriate sui generis uses, such as that proposed. The proposed layout maximises the use of the Site space whilst safeguarding the amenity of neighbours and other features of value/interest.
E 1.3	Existing buildings are re-used where practicable		All buildings associated with the Site's previous use have been demolished prior to the Applicant acquiring the Site and therefore this standard is not relevant to the Proposed Development. The Proposed development is in accordance with UDP Policy OL21 in relation to restoring degraded land and Draft Core Strategy Policy EM1 in relation to giving preference to development of previously developed land.
P 1.4	A proportion of the new roof space is used for outdoor space, green roofs or renewable energy		The Proposed Development will contain three roofs which could potentially be used for rainwater harvesting and this is being considered. Rainwater could potentially be harvested from the aggregate storage bays for use in the aggregate washing process and for dust suppression. Rainwater could also be harvested from the office building and weighbridge office for use to flush WCs. Proposed SUDS will be subject to a detailed Drainage Scheme that will be submitted for approval as a condition of planning. Attenuation of water using green roofs is not proposed as a means of managing surface water runoff. Living (brown) Roofs will be provided on the aggregate storage bays of the Proposed Development

Table 6.1: Proposed Development Sustainability Appraisal**1.0 Re-use of Land**

Ref	KPI	Progress	Explanation of Assessment
			The provision of photovoltaic panels is a feasible renewable energy option that will be considered on the two proposed office buildings. The Proposed Development therefore has the potential to comply with Draft Core Strategy policies BE1 and EM1 in relation to the use of SUDs and water efficiency.
Conclusion: The Proposed Development performs well with regards to the re-use of land. The Site is brownfield having been previously operational as a Powergen site, a fuel storage facility for the nearby Bulls Bridge Power Station and a creosote works. The Site has been vacant for at least 6 years. The Proposed Development will bring the Site back to beneficial use. The Site is located within an Industrial and Business Area and Policies LE1 and LE2 of the Hillingdon UDP seek to retain land within these areas for B1, B2, B8 and appropriate sui generis uses, such as that proposed. The proposed layout maximizes the use of the Site space whilst safeguarding the amenity of neighbours and other features of value/interest. The Proposed Development complies with UDP Policy OL21 in relation to restoring degraded land and Draft Core Strategy Policy EM1 in relation to giving preference to development of previously developed land. Roofs proposed will be considered for rainwater harvesting and for the provision of photovoltaic panels. In addition, living roofs will be provided on the aggregate storage bays. The Proposed Development therefore has the potential to comply with Draft Core Strategy Policies BE1 and EM1 in relation to the use of SUDs and water efficiency.			

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
E 2.1	The development follows the principles of good design set out by London Plan policy 4B.1		The Site is identified as suitable for sui generis uses, such as that proposed, in the Hillingdon UDP. The Site has previously been used as a Powergen site, a fuel storage facility for the nearby Bulls Bridge Power Station and a creosote works. The Site's existing townscape character is of poor quality and resembles wasteland. The development proposals will deliver a major improvement over the present overgrown and derelict condition of the Site. In addition, it is considered that the design principles adopted by the design team and the emerging landscape proposals will substantially enhance the Site's existing wasteland landscape character. The Proposed Development's design and layout will have due regard of the Site's setting by: • enclosing infrastructure within buildings of uniform appearance and appropriate scale; • ensuring floodlighting (in the form of hooded halogen luminaries) is sensitively positioned and directed to avoid off-site light spill whilst ensuring safe working light levels; • restricting the height of taller elements by means of more efficient internal configuration; and • minimising the height of stockpiles such as it will not be easily visible from agreed viewpoints. The Proposed Development has been designed to ensure that it complies with UDP policies BE13, BE25 and OE1 relating to layout and appearance, improvement of industrial areas and character and amenity of neighbouring uses (Refer to the Landscape and Visual Impact Assessment (ENVIRON UK Ltd, August 2012)). The Proposed Development's design will also ensure the safety and security of site workers, visitors and the general public (Refer to Design and Access Statement for further details). Existing trees on-site will be protected where ever possible from construction and operational impacts. Landscaping will be provided along the northern, eastern and western boundaries of the Proposed Development. Any viable and useful shrubs and trees along the boundary with Yeading Brook will be retained to ensure that the visual amenity of this natural feature is greatly improved.

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
E 2.2	The need for mechanical ventilation, heating and cooling systems is minimised		The two office buildings within the Proposed Development will comply with Building Regulations and will be designed to minimise energy usage. The use of mechanical ventilation, heating and cooling systems within the office building and the weighbridge office will be minimised. Natural ventilation will be provided with some mechanical cooling. The Proposed Development should avoid contributing to the urban heat effect, thereby ensuring compliance with Draft Core Strategy Policy EM1.
E 2.3	Buildings provide for flexibility during their projected operational lives		The two office buildings within the Proposed Development will have adaptable interiors which will allow alteration in the future should the need arise. The office building will house the managerial staff and support personnel. The weighbridge office has been designed to serve a specific purpose; however the interior could potentially be altered in the future if necessary. Both buildings will comply with Building Regulations and will be designed to meet the needs of those with disabilities. The remaining plant and infrastructure within the Proposed Development are bespoke, specifically required for the aggregate recycling and asphalt production processes proposed. The Proposed Development will comply with Draft Core Strategy Policy BE1 by ensuring that the proposed buildings will help to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods, where people enjoy living and working.
E 2.4	Buildings mitigate for the effects of the urban heat island and the expected increases in hot dry summers and wet mild winters		The two office buildings within the Proposed Development will be designed to allow manually controlled natural ventilation and will be well insulated, which will help to avoid overheating in the summer months. There is also the potential to harvest rainwater from the roofs for use in flushing WCs and SUDS will be installed to attenuate surface water runoff. The Proposed Development should avoid contributing to the urban heat effect, thereby ensuring compliance with Draft Core Strategy Policy EM1.

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
E 2.5	Facilities for bicycles and electric vehicles are provided		The Proposed Development will provide 70 car parking spaces at the Site, five bicycle spaces and five motorcycle spaces. In addition, the Site enjoys good public transport, walking and cycling links, with Hayes and Harlington Station 875 m to the north-east. The Site is accessible to various facilities and services located in the Hayes area, many of which are within reasonable walk and cycle distances. A Travel Plan forms part of the Traffic Impact Assessment that accompanies the planning application and this presents sustainable transport options and suggests monitoring indicators. Allowance for vehicle charging points has been made in the power infrastructure so that they could be retrofitted should demand be identified in the future. The Proposed Development therefore has the potential to comply with Draft Core Strategy Policy EM8.

Conclusion: The Proposed Development performs well with regards to natural systems, in regards to the design and layout of the Proposed Development.

The Site's existing townscape character is of poor quality and resembles wasteland. The development proposals will deliver a major improvement over the present overgrown and derelict condition of the Site.

The two proposed office buildings within the Proposed Development will have adaptable interiors which will allow alteration in the future should the need arise. The office buildings will comply with Building Regulations and will be designed to minimize energy usage. The use of mechanical ventilation, heating and cooling systems within the office building and the weighbridge office will be minimised where possible. Natural ventilation will be provided with some mechanical cooling. Manually controlled natural ventilation and good levels of insulation will assist in minimising the potential for overheating in the summer months.

The remaining plant and infrastructure within the Proposed Development are bespoke, specifically required for the aggregate recycling and asphalt production processes proposed, and Term Maintenance activities associated with borough service contracts.

The Proposed Development will provide cycle parking and enjoys good public transport, walking and cycling links, with Hayes and Harlington Station 875 m to the north-east. The Site is accessible to various facilities and services located in the Hayes area, many of which are within reasonable walking and cycle distances. Allowance for vehicle charging points has been made in the power infrastructure so that they could be retrofitted should demand be identified in the future.

The Proposed Development has been designed to ensure that it complies with UDP Policies BE13, BE25 and OE1 in regards to layout and appearance, improvement of industrial areas and character and amenity of neighbouring uses. It will also comply with Draft Core Strategy Policy BE1 by ensuring that the proposed buildings assist in improving and maintaining the quality of the built environment. The Proposed Development should avoid contributing to the urban heat effect, thereby ensuring compliance with Draft Core Strategy Policy EM1 and it has the potential to comply with Draft Core Strategy Policy EM8 in relation to the future provision of vehicle charging points.

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
E 3.1	An energy demand assessment is prepared		An Energy Statement (ENVIRON UK Ltd, August 2012) including an energy demand assessment has been prepared to accompany the planning application. The document responds to London Plan policy requirements identifying how the Mayor's energy hierarchy has been addressed, whilst also discussing relevant local policy. It reviews options for reducing CO ₂ emissions through energy efficiency measures, energy supply and renewable energy technologies having regard to the characteristics of the Site, the Proposed Development and the local environment.
E 3.2	Maximise energy efficiency		The Energy Statement (ENVIRON UK Ltd, August 2012) sets out how the Applicant intends to design, construct and operate an energy efficient plant at Bulls Bridge. The Applicant's strategy and approach is to employ the same, or improved, design and energy efficiency standards that have proven successful and effective at their Erith Facility. The Erith design team has been retained so the key design details will be redeployed for the Proposed Development. The energy performance for the Proposed Development will match or further improve upon the Erith Facility's performance. The key technologies that will be used at the Site to achieve best practice energy performance levels are: • High insulation standards for the aggregate dryers; • Controlling of moisture content of aggregate; • Variable speed drives for motors; • Best practice lighting design and control; • Power factor correction; • Energy metering; • EF1 high efficiency motors and drives; and • Conveyors fitted with rotation sensors to eliminate any possibility of spillage due to stoppage out of sequence.
E 3.3	Consideration has been given to the ranking method for heating and where necessary cooling systems: Passive design;		This standard is not directly applicable for the Proposed Development which has very specific power needs. The Energy Statement (ENVIRON UK Ltd, August 2012) sets out the proposed Energy and Carbon Strategy for the Proposed Development using the "Energy Hierarchy", and indicates a 26% reduction in carbon impact can be achieved through Best Practice Design and Operation of the Proposed Development's Processing Plants. This is equivalent to 2,153 tonnes CO₂ per year.

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
	then Solar water heating; then CHP for heating and cooling (i.e. trigeneration), preferably fuelled by renewables; then community heating and cooling; then heat pumps; and then gas condensing boilers		An additional reduction in carbon impact may be achieved by using Recycled Fuel Oil for the rotary dryer, but this opportunity is restricted by issues associated with meeting air quality standards (referred to in London Plan Policy 5.7 D) and Local Authority Pollution Prevention and Control Permit criteria An area of up to 118 m² photovoltaic panels will be installed on the roof of the Proposed Development's weighbridge and administration buildings to achieve 25% carbon emissions reduction for the two buildings. This will be equivalent to a saving of 8 tonnes CO₂ per year.
P3.4	Supply energy efficiently and incorporate decentralised energy systems, and use renewable energy where feasible		Renewable energy options have been reviewed and are documented within the Energy Statement (ENVIRON UK Ltd, August 2012). Renewable energy options have not been found to be appropriate for technical reasons and space requirements associated with the specific energy issues in this industrial sector. However, there is the opportunity to incorporate a PV array within the roof areas of two office buildings proposed within the Proposed Development (as discussed above). The Proposed Development is in accordance with Draft Core Strategy Policy EM1 as it addresses climate change mitigation by reducing CO₂ emissions and by proposing the use of renewable energy generation to contribute to the power demand of the offices.
E 3.5	100% outdoor lighting should be energy efficient, minimizing light lost to sky		Exterior lighting shall be low energy sodium type with low light pollution output controlled via light sensing cells. Floodlighting will be sensitively positioned and directed to avoid off-site light spill whilst ensuring safe working light levels. Details of a detailed lighting strategy will be submitted to LBH for approval, post consent.
P 3.6	Wherever outdoor lighting or other electrically powered street furniture is proposed on site, it should be solar powered and minimise light lost to the sky		The Applicant has committed to investigate the potential for solar powered lighting within the Proposed Development. Details of a detailed lighting strategy will be submitted to LBH for approval, post consent.

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
E 3.7	Carbon emissions from the total energy needs are reduced by 10% by the on-site generation of renewable energy		The Energy Statement (ENVIRON, August 2012) predicts the overall carbon impact of the Proposed Development in operation to be 9,145 tonnes CO₂ per year, of which: • 85% are associated with the Asphalt plant; • 14% are associated with the Aggregate Recycling Plant; and • 1% are associated to the offices, wet waste treatment plant and other ancillary activities. The Energy Statement concludes that with regards to the industrial processes within the Proposed Development, the most appropriate strategy to improve energy efficiency and reduce carbon emissions from the Proposed Development is the application of Best Practice standards of design and operation for the asphalt and aggregate recycling plants, including electrical efficiency features and optimum insulation standards. The Applicant has already demonstrated the ability to operate an energy efficient asphalt plant at Erith Facility, and an energy efficient aggregate recycling plant at their Dartford Facility. These are demonstrated to be 26% and 39% better respectively, than current industry benchmarks in terms of energy efficiency and carbon emissions. The Energy Statement indicates that a 26% reduction in carbon impact can be achieved in the operation of the Proposed Development through Best Practice design and efficient operation of the processing plants. This is equivalent to a saving of 2,153 tonnes CO₂ per year. The Energy Statement also assesses the energy and carbon emissions from the proposed buildings (weighbridge and administration offices). The predicted energy and carbon emissions of the buildings is 33 tonnes CO₂ per year. The appropriate renewable energy technology necessary to reduce this by 25% is recommended to be up to 118 m² of PV panels installed across the roofs of the two buildings. A construction standard will also be adopted that exceeds current Building Regulations by 10%.
P 3.8	Major developments should be zero carbon emission developments		This preferred standard will not be met by the Proposed Development as it is not feasible to operate a zero carbon aggregate recycling plant and asphalt plant. The Proposed Development will help the London Borough of Hillingdon in achieving the waste hierarchy through effective and efficient recycling or re-using of materials that would otherwise go to landfill. All materials recycled are a substitute for primary aggregates.
P 3.9	Services will operate efficiently under different loadings		The Proposed Development will incorporate appropriate energy saving features and controls including movement sensors and automatic controls/cut off in order to ensure that the plant will operate efficiently.

Table 6.1: Proposed Development Sustainability Appraisal**2.0 Natural Systems**

Ref	KPI	Progress	Explanation of Assessment
P 3.10	Contribution to London's hydrogen economy		This preferred standard will not be met by the Proposed Development as these technologies are not appropriate for the aggregate recycling and asphalt plant proposed in the Proposed Development.

Conclusion: The Proposed Development performs well with regards to energy efficiency and CO₂ emissions reduction. Three of the standards are not directly relevant to the Proposed Development, as it has very specific power requirements.

An Energy Statement (ENVIRON UK Ltd, August 2012), including an energy demand assessment, has been prepared in accordance with the London Plan. The document identifies how the Mayor's energy hierarchy has been addressed, whilst also discussing relevant local policy. It reviews options for reducing CO₂ emissions through energy efficiency measures, energy supply and renewable energy technologies.

The Energy Statement sets out how the Applicant intends to design, construct and operate an energy efficient plant at Bulls Bridge. The Applicant's strategy and approach is to employ the same, or improved, design and energy efficiency standards that have proven successful and effective at their Erith and Dartford Facilities.

This will achieve a 26% carbon emissions reduction compared with the current industry standards. This is equivalent to 2,153 tonnes CO₂ per year. It is not feasible to use renewable energy to power the processes to be used at the Proposed Development. Energy saving features and controls including movement sensors and automatic controls/cut off will be installed in order to ensure that the plant will operate efficiently.

Up to 118 m² of photovoltaic panels will be used to achieve 25% carbon emissions reduction for the two office buildings proposed on the Site.

The Proposed Development is in accordance with Draft Core Strategy Policy EM1 as it addresses climate change mitigation by reducing CO₂ emissions and by proposing the use of renewable energy generation to contribute to the power demand of the offices.

Table 6.1: Proposed Development Sustainability Appraisal**4.0 Materials**

Ref	KPI	Progress	Explanation of Assessment
P 4.1	No material with high embodied impact will be used in construction or specification. 3 of the key building elements to achieve Green Guide rating A+ to D.		Materials to be used in the construction of the plant include steel and therefore this preferred standard cannot be met by this type of development. There are no alternative materials that can be used for the plant infrastructure. However, for the office buildings Kingspan is proposed as a main supplier of building products. Kingspan products achieve Green Guide 2008 ratings of A+ and A. The Proposed Development complies with Draft Core Strategy Policy EM11 by promoting waste as a resource and facilitating the re-use of materials and recycling of aggregates.
E 4.2	> 50% of timber from FSC (or a CPET) and balance from temperate sources		Little if any timber will be used in Proposed Development's construction. Where and if timber is required, it will be FSC sourced or recycled from elsewhere. This standard will therefore be exceeded.
P 4.3	> 90% of structural timber from FSC (or a CPET) and balance from temperate sources		Little if any timber will be used in Proposed Development's construction. Where and if timber is required, it will be FSC sourced or recycled from elsewhere. This standard will therefore be met.
P 4.4	No peat or natural weathered limestone will be used in buildings or landscaping		No peat or natural weathered limestone will be used in buildings or landscaping.
E 4.5	No insulation materials containing substances that contribute to stratospheric ozone depletion or with Global Warming Potential will be used.		No insulation materials containing substances that contribute to stratospheric ozone depletion or with Global Warming Potential will be used.
P 4.6	Before demolition, appraisal by use of ICE's		Not applicable. The Site has previously been cleared and no demolition will be undertaken in order to construct the Proposed Development.

Table 6.1: Proposed Development Sustainability Appraisal**4.0 Materials**

Ref	KPI	Progress	Explanation of Assessment
	Demolition Protocol		
P 4.7	50% (by mass) of construction materials will be sourced within 35 miles of site		The Proposed Development will be constructed using recycled secondary aggregates at every possible opportunity, including in concrete. Any concrete found on-site will be processed and re-used on-site in sub-bases. All construction materials will be sourced from within 35 miles of the Site except possibly for structural steelwork. The target of 50% could potentially therefore be met but it cannot be confirmed, until construction works commence and detailed construction method statements have been prepared.
E 4.8	A strategy to minimise new aggregates has been prepared		This standard will be exceeded. The Proposed Development will be constructed using recycled secondary aggregates at every possible opportunity, avoiding the use of new aggregates as far as possible. New concrete will use recycled aggregates. Sub-bases will comprise re-used processed concrete, in part reclaimed from the Site. Although detailed construction method statements have yet to be prepared, it is anticipated that approximately 12,000 tonnes of recycled sub-bases will be used and approximately 14,500 tonnes of concrete with recycled aggregate content, will be used. Once established, the Proposed Development itself will enable the re-use and recycling of up to 300,000 tonnes of pavement arisings from infrastructure services per year.
P 4.9	10% total value of materials used will be derived from recycled and reused content		This standard will be exceeded in on the following fronts: • structural steelwork to be used will contain approximately 75% recycled material; • sub-bases will contain 100% recycled aggregate; • concrete is likely to contain a minimum of 10% recycled content. The Proposed Development will be constructed using recycled secondary aggregates at every possible opportunity. During operation, 100% of aggregates produced will be recycled whilst some asphalt mixes will contain up to 70% recycled material.
Conclusion: The Proposed Development performs particularly well, exceeding essential and preferred standards on minimising the use of new aggregates and using recycled materials. As such: • structural steelwork proposed to be used will contain circa 75% recycled material; • sub-bases will contain 100% recycled aggregate; and			

Table 6.1: Proposed Development Sustainability Appraisal**4.0 Materials**

Ref	KPI	Progress	Explanation of Assessment
			concrete is likely to have a minimum of 10% recycled content. The Proposed Development will be constructed using recycled secondary aggregates at every possible opportunity. There is also potential to source all construction materials from within 35 miles of the Site except possibly for structural steelwork. Where and if timber is required in construction of the Proposed Development, it will be FSC sourced or recycled from elsewhere. No peat or weathered limestone will be used on the Site. Materials to be used in the construction of the plant include steel which has a high embodied energy impact. There are no alternative materials that can be used for the plant structures and materials. However, for the office buildings Kingspan is proposed as a main supplier of building products. Kingspan products achieve Green Guide 2008 ratings of A+ and A. The Proposed Development complies with Draft Core Strategy Policy EM11 by promoting waste as a resource and facilitating the re-use of materials and recycling of aggregates.

Table 6.1: Proposed Development Sustainability Appraisal**5.0 Water**

Ref	KPI	Progress	Explanation of Assessment
E 5.3	100% of newly built property will have a water meter		Meters will be installed to monitor usage and as the basis against which reductions in long term water usage will be recorded.
P 5.4	Use of greywater for all non-potable uses		Within the Proposed Development, water will be used in the aggregate wash plant, for dust suppression, in the offices within hand basins and WCs and in the staff welfare facility. The proposed wash plant's operation will mirror that of the Applicant's existing Dartford Facility which uses 30m³ of water per day to top up its tanks. Subject to detailed design as part of the Proposed Development 's Drainage Scheme, rainwater could be harvested from some of the roofs including the proposed Aggregate Storage Bays. Approximately 900 m³ could potentially be collected from the Aggregate Storage Bays roofs for use in the wash plant and for dust suppression. Rainwater could also be collected from the offices for use to flush WCs. A detailed assessment will be undertaken to consider the potential for rainwater to be used to supplement standard potable water supplies. Water can also be recovered from the proposed gully treatment facility to be used for aggregate washing/dust suppression/ vehicle cleaning. It will not be possible to re-use water which has been used for dust suppression because it will become surface water runoff and will enter the Site's sustainable drainage systems. Water used to wash the aggregates will require treatment if it were to be reused. There is therefore potential for potable water to only be used within the welfare facilities and for hand basins within the offices. The Proposed Development is in accordance with Draft Core Strategy Policy EM1 through proposing the use of rainwater on site as a climate change adaptation measure.

Conclusion: The Proposed Development performs well with regards to efficient use of potable water. Potable water use will be metered to monitor usage and this information will be used as the basis against which reductions in long term water usage will be recorded. There is potential for potable water use to be limited to the canteen block and hand basins. A detailed assessment will be undertaken to consider the potential for rainwater to be used in the aggregates washing process, for dust suppression and for flushing WCs. The Proposed Development therefore performs well with regards to water metering and reducing potable water use but does not achieve the preferred standard relating to greywater recycling as there is limited potential for greywater to be re-used within the Proposed Development.

The Proposed Development is in accordance with Draft Core Strategy Policy EM1 through proposing the use of rainwater on site as a climate change adaptation measure.

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
E 6.1	Adverse impacts of noise have been minimised, using measures between source and receptor in preference to sound insulation at the receptor		The Site's existing noise environment is substantially influenced by rail and traffic movement from the Paddington to Bristol rail line to the north and the A312 flyover along the western Site boundary. The closest noise sensitive receptors to the Site will be the proposed residential development to the north-east of the Site at the Southall Gas Works site, the leisure moorings on the Grand Union Canal (Paddington Branch) along the eastern Site boundary and staff accommodation at the proposed coachworks development to the south of the Site. Mitigation measures will be integral to the proposed on-site processes and plant and based on the Applicant's established experience and day-to-day operations at Erith and Dartford. Process equipment at the Applicant's Dartford and Erith Facilities has been designed to limit noise and vibration. The same equipment is proposed to be used at Bulls Bridge and will be housed in specially constructed buildings. This technology will also ensure processed materials reach stockpiles with the added benefit of little need for further dust suppression. In addition, a 7m high noise attenuation wall will be constructed along the northern and eastern Site boundaries at the onset of the development to ensure minimal noise impact to the moorings on the Grand Union Canal (Paddington Branch). Environmental noise surveys have been undertaken at the Site and at the closest sensitive receptors to develop a comprehensive understanding of the prevailing noise environment. This information has been used to ensure that proposed production and recycling processes and plant are designed, specified and constructed to operate within noise limits agreed with LBH's Environmental Health Officer. The noise prediction and assessment identify that once operational, that both daytime and night-time $L_{Aeq,T}$ specific noise levels are predicted to remain within the criteria adopted for the assessment at all sensitive receptor locations. The $L_{Ar,Tr}$ rating noise level is predicted to remain at least 5dB below the quietest $L_{A90,T}$ background noise level at all existing traditional residential receptor locations, which is considered to demonstrate that the impact of noise from the Proposed Development will be adequately controlled and ensure that complaints are unlikely. In addition, no detectable increase in noise has been predicted within any Nature Conservation Areas or in areas prized for their amenity, leisure and recreational value. As such, no further mitigation measures will be required to reduce the impact of operational noise, and the requirements of the LBH, as set out within their Noise Supplemental Planning Document, will be met. During the construction phase, noise emissions will be effectively controlled by employing stringent management practices. These will be implemented through adherence to a Construction Method

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
			Statement/Construction Environmental Management Plan to be agreed with LBH. The construction noise predictions and assessment identified that construction noise levels are likely to remain well below the levels recommended within BS5228. The proposals in relation to noise will ensure that the Proposed Development is in accordance with UDP saved policies EC3, OE3 and MIN23 and Draft Core Strategy Policy EM8.
E 6.3	All new gas boilers should produce low levels of NO _x .		The Proposed Development will not include any gas boilers. However, the rotary dryers used within the asphalt plant will be fired using gas oil as a fuel. The dryers will be fitted with the latest design in burners to reduce fuel consumption, ensure efficient burn with optimum control. As a result emissions of combustion gases will be minimised. At this stage it is assumed that the dryers will be fuelled by gas oil. However, the possibility of installing a gas supply to the Site may be investigated, which has the potential to further reduce emissions. The facility will require an Environmental Permit to operate (Local Authority and Environment Agency) and will therefore have to demonstrate that it complies with the Best Available Techniques (BAT) to minimise emissions. Electric heating is proposed in offices.
E 6.4	Take measures to reduce and mitigate exposure to air pollution		The Site is located within a designated Air Quality Management Area due to exceedences in NO₂ levels. The closest emission sensitive receptors to the Site (dust, gaseous, particulate) are considered to be the leisure moorings on the Grand Union Canal (Paddington Branch) along the eastern Site boundary, existing residential on North Hyde Gardens, the proposed residential development to the north-east of the Site at the Southall Gas Works site, as well as ecological receptors such as surface water features (the Grand Union Canal, Yeading Brook), associated vegetation and the Minet Country Park. Emissions to air will arise from a number of sources: • Operational emissions from the asphalt plant; • Operational Fugitive emissions of dust and odour; and • Traffic emissions from vehicles accessing the site. The location of the Site will allow the Applicant to better serve the Applicant's Local Authority clients in the west of London and this has the potential to reduce existing road transport of waste and recycled products across London by approximately 20%.

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
			To meet planning policy requirements and demonstrate that leisure, residential and ecological receptors will not be exposed to poor and unsuitable air quality, an air quality assessment has been undertaken to accompany the planning application. The operation of the Aggregate Recycling Plant can be an inherently dusty process and lead to fugitive emissions of dust and odour. The Applicant has considerable experience of successfully operating similar plant at its existing Dartford Facility without giving rise to significant emissions of odour or dust. This experience will be utilised at the Site to ensure that design and mitigation measures are implemented to meet best available techniques and where possible will provide an improvement on the already successful operations carried out by their Dartford Facility. A fugitive emissions plan will be implemented which will include site inspections three times per day to check for dust and odour emissions. On this basis, it is considered that fugitive emissions will be suitably controlled and thus the residual impacts will be negligible. The development proposals will result in new road vehicle movements. The assessment of vehicle emission impacts has indicated that this will result in a medium increase in NO₂ concentrations at the residential properties on North Hyde Garden and a small increase at residential properties on North Hyde Road. Emissions to air of NO_x and fine particulates will also arise from the operation of the rotary driers associated with the Asphalt Plant. The main impact from these emissions will arise at those receptors closest to the Site, including the leisure moorings and Minet Country Park. In these locations the operation of the Asphalt Plant results in a small increase in NO₂ concentrations with, at maximum, a medium increase in PM₁₀ and PM_{2.5} concentrations. The significance of impacts takes into account both the increase in concentrations and the baseline air quality. Due to the existing high concentrations of NO₂, the impact of the Proposed Development is considered to result in a moderate adverse impact at the receptors on North Hyde Gardens, with a slight adverse impact at the majority of other receptors. With regards to PM₁₀ the development proposals result in a negligible impact at all receptors. For PM_{2.5} where the Proposed Development is predicted to result in a medium increase in concentrations at three receptors close to the Site, this results in a slight adverse impact, although concentrations are predicted to remain comfortably within the objective. At all other receptors the impacts are negligible. Mitigation measures will be integral to the proposed on-site processes and plant specification and based on the Applicant's established experience and day-to-day operations at Erith and Dartford.

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
			During the construction phase, dust emissions will be effectively controlled by employing stringent, standard management practices. These will be implemented through adherence to a Construction Method Statement/Construction Environmental Management Plan to be agreed with LBH. Fugitive emissions will be controlled through the application of a fugitive emissions plan, similar to those which have been successfully implemented at the Applicant's existing site. The facility will require an Environmental Permit to operate (Local Authority and Environment Agency) and will therefore have to demonstrate that it complies with the Best Available Techniques (BAT) to minimise emissions. A Green Travel Plan has been prepared for the Proposed Development which contains details of the available public transport services and walking and cycling routes. Cycle parking will be provided in the Proposed Development. The Applicant has a company- wide policy to ensure its vehicle fleet is kept up to date and is regularly replaced thereby ensuring vehicles comply with the latest emission standards. The Proposed Development will be in accordance with UDP Saved Policy EC3 and LE1.
P 6.5	Low emission development that minimizes air quality impact of plant, vehicles and other sources		The operation of the Aggregate Recycling Plant can be an inherently dusty process and lead to fugitive emissions of dust and odour. Other emissions will arise from the operation of the Asphalt Plant and HGVs accessing the site. Therefore this cannot be classed as a low emission development. However, the applicant has taken steps to minimize the air quality impact of plant, vehicles and other sources. The facility will require an Environmental Permit to operate (Local Authority and Environment Agency) and will therefore have to demonstrate that it complies with the Best Available Techniques (BAT) to minimise emissions. The processing equipment installed at the Applicant's Dartford facility has been designed to limit the amount of dust produced and will be replicated at the Proposed Development. Fugitive dust emissions will otherwise be controlled across the Site using dust suppression techniques. Emissions from the asphalt plant will be passed through a bag filter prior to emission to air. The rotary dryers will be fitted with the latest design in burners to reduce fuel consumption, ensure efficient burn with optimum control. As a result emissions of combustion gases will be minimised. At this stage it is assumed that the dryers will be fuelled by gas oil. However, the possibility of installing a gas supply to the Site may be investigated, which has the potential to further reduce emissions. All vehicles within the Applicant's fleet are Euro 5 standard certified meaning that they meet the current

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
			European standard for low emissions of new vehicles. The Applicants maintains a company-wide 'Environmentally Friendly Plant Replacement Policy' which means that when vehicles are replaced the latest Euro emission standard is specified. All vehicles (new or older) meet with Transport for London's (TfL) latest London Emission Zone (LEZ) standard, which in turn meet the latest emission standards. The Applicant actively enquires as to the availability of the next generation of engines and the replacement programme is planned around those engines becoming available. These measures mean that nearly all vehicles are no more than 6 years old. The Applicant is assessing the feasibility of using the adjoining canal network for future freight movements.
E 6.6	Use Sustainable Urban Drainage Systems (SUDS) measures, wherever practical		A Flood Risk Assessment (including a drainage assessment) has been prepared to accompany the planning application. The Site is located within Flood Zone 1 so there is little or no risk of fluvial or tidal flooding. SUDS will be implemented subject to a detailed Drainage Scheme that will be submitted to LBH and the Environment Agency for approval prior to commencement of development. Subject to detailed design and approval, SUDS will incorporate a combination of infiltration trenches and soakaways. Rainwater harvesting will also be considered at the detailed design stage to provide the majority of non-potable water supply for domestic purposes. It may also be possible to route some of the Site runoff from areas such as the aggregate stores via gross pollutant traps/sediment filters into a first flush pit from where water can be pumped out and stored for re-use. The Proposed Development will be in accordance with UDP Saved policies OE7, OE8, OE10 and draft Core Strategy Policy EM6 with regards to flood risk management.
E 6.7	50% attenuation of the undeveloped site's surface water run off at peak time		The Proposed Development will attenuate 100% of the undeveloped sites surface water runoff at peak times through the use of infiltration techniques. The Site will effectively discharge at greenfield rates. Therefore this standard will be exceeded.
P 6.8	100% attenuation of the undeveloped sites' surface water run off at		The Proposed Development will attenuate 100% of the undeveloped sites surface water runoff at peak times through the use of infiltration techniques. The Site will effectively discharge at greenfield rates. Therefore this standard will be met.

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
	peak time		
E 6.9	Mitigate any negative impact on the microclimate of existing surrounding public realm and buildings to meet the Lawson criteria for wind comfort and safety.		The Site is spatially well contained with: • an elevated railway embankment to the north; • the Paddington Branch of the Grand Union Canal to the east; • warehouse type development and vacant land to the south; and • the Yeading Brook to the west, beyond which are large scale warehouse development. The Proposed Development does not propose to provide any public realm. Public realm in close proximity to the Site is limited to the canal itself and the canalside towpath. Key points relevant to potential wind impacts are as follows: • Mature woodland screen the eastern boundary of the Site. • The eastern boundary of the Proposed Development will comprise a new 7 m high wall, set back to safeguard the mature woodland. • Two 9.5 m tall storage bays with a curved roof profile will also be located on the eastern boundary. • A 30m high emissions stack. • Proposed buildings are generally only 3 storeys high, with the exception of the asphalt plant, 27 m tall and located some 40m from the eastern Site boundary. The prevailing wind direction in the summer will be south-westerly and in winter north-easterly. The Proposed Development will have no noticeable impact on the wind microclimate of the canal or the towpath users due to intervening features and separation distances that will be maintained. Wind speeds across the Site will be minimised by the plant infrastructure with any vortex generated around the asphalt plant building trapped well within the Proposed Development's boundary walls. Further protection will be afforded by existing and proposed features along the Site's eastern boundary. It is considered that the Proposed Development will not adversely affect wind microclimate to the detriment of canal and towpath users.

Conclusion: The Proposed Development performs well with regards to minimising pollution. Measures will be put in place in terms of the layout of the Proposed Development to ensure that an acceptable noise environment will be achieved within the Proposed Development and that noise impacts on surrounding receptors

Table 6.1: Proposed Development Sustainability Appraisal**6.0 Pollution**

Ref	KPI	Progress	Explanation of Assessment
			will not be significant. Mitigation measures for air quality will be integral to the proposed on-site processes and plant specification and based on the Applicant's established experience and day-to-day operations at Erith and Dartford. During the construction phase, dust emissions will be effectively controlled by employing stringent, standard management practices. These will be implemented through adherence to a Construction Method Statement/Construction Environmental Management Plan to be agreed with LBH. Fugitive emissions will be controlled through the application of a fugitive emissions plan, similar to those which have been successfully implemented at the Applicant's existing site. The facility will require an Environmental Permit to operate (Local Authority and Environment Agency) and will therefore have to demonstrate that it complies with the Best Available Techniques (BAT) to minimise emissions. A Green Travel Plan has been prepared for the Proposed Development which contains details of the available public transport services and walking and cycling routes. SUDS will be used to manage surface water run-off from the Proposed Development such that 100% of the site's surface water runoff will be attenuated at peak times. The Site will effectively discharge at greenfield rates. It is considered that the Proposed Development will not adversely affect wind climate to the detriment of canal or towpath users. The mitigation measures proposed in relation to noise will ensure that the Proposed Development is in accordance with UDP saved policies EC3, OE3 and MIN23 and Draft Core Strategy Policy EM8. The Proposed Development will be in accordance with UDP Saved Policy EC3 and LE1 with relation to Air Quality. The Proposed Development will be in accordance with UDP Saved policies OE7, OE8, OE10 and draft Core Strategy Policy EM6 with regards to flood risk management.

Table 6.1: Proposed Development Sustainability Appraisal**7.0 Comfort**

Ref	KPI	Progress	Explanation of assessment
E 7.1	Inert and low emission finishes, construction materials and carpets and furnishings used where practical		Inert and low emission finishes, construction materials and carpets and furnishings used where practical
P 7.2	Design buildings for indoor comfort of users.		The new build offices will comply with the latest Building Regulations and current best practice and will be designed to be fit for purpose, including indoor comfort.
E 7.3	All plant and machinery should be accessible for easy maintenance		As per the Applicant's Standard Company Procedures, all plant and machinery to be accessible for easy maintenance and the Proposed Development will be designed in compliance with relevant Health & Safety legislation and Approved Code of Practices.
E 7.4	All developments meet the principles of inclusive design, adopting the principles of SPG 'Accessible London: Achieving an Inclusive Environment'		The Design and Access Statement sets out the access arrangements for the Proposed Development and how it accords with UDP saved Policy LE1 relating to access. The access arrangements for the Proposed Development will be suitable for the proposed use ensuring suitable inclusive access for employees and meeting safety requirements.
P 7.7	Developments are e-enabled		IT links will be provided/installed for use in the development.
E 7.8	Principles of 'Secure by Design' have been used to develop the design		Internal site pedestrian walkways will be provided to safeguard the movement of employees and visitors. Access by foot from the car park to office will be suitably marked and lit. Due to the nature of the Proposed Development, in order to ensure the safety and security of site employees, visitors and the general public, the Site will be entirely secured by means of walls and palisade fencing. The access roads to the Site are private and therefore no access will be allowed to the general public. The Proposed Development will therefore be in accordance with UDP saved policies BE18 and LE7.
Conclusion: The Proposed Development performs well with regards to this KPI. The new build offices will comply with the latest Building Regulations and current best practice and will be designed to be fit for purpose, including indoor comfort.			

Table 6.1: Proposed Development Sustainability Appraisal**7.0 Comfort**

Ref	KPI	Progress	Explanation of assessment
			All plant and machinery will be accessible for easy maintenance. The access arrangements for the Site will be suitable for the proposed use ensuring suitable inclusive access for employees and meeting safety requirements. The Proposed Development will also be designed to be in compliance with relevant Health & Safety legislation and Approved Code of Practice. IT links will be provided/installed for use in the development and inert and low emission finishes, construction materials and carpets and furnishings used where practical. The Proposed Development will be in accordance with the relevant local policies, namely UDP saved Policies BE18, LE1 and LE7.

Table 6.1: Proposed Development Sustainability Appraisal**8.0 Natural Environment**

Ref	KPI	Progress	Explanation of Assessment
E 8.1	No net loss of public open space		The Proposed Development will not result in any loss of public open space.
P 8.2	A net gain in public open space		This type of development will not normally be expected to provide new public open space. A landscaping scheme will accompany the planning application to demonstrate how noteworthy landscape features will be retained and enhanced as part of the development proposals. This will include to the east of the Site, the boundary wall being set back by to safeguard the existing woodland. Viable and useful shrubs and trees will be retained to help screen the Site and additional vegetation will be introduced to enhance the amenity, biodiversity and ecological value of the Site. The Proposed Development will therefore be in accordance with UDP saved policies OL11, OL26 and LE7 and draft Core Strategy Policies EM3 and EM4.
E 8.3	New public open space is created in an area of deficiency		It is not appropriate for this type of development to provide publicly accessible open space on-site. However, the Proposed Development will retain a strip of land to the east of the Site to enable safeguarding of woodland trees and for landscape and biodiversity enhancement.
E 8.4	No net loss of biodiversity and access to nature		An Extended Phase I Habitat Survey of the Site concluded that the ecological value of the Site is limited to the Site level only. There are however noteworthy ecological features of importance off-site (i.e. the Grand Union Canal and Minet Country Park). The Proposed Development will adopt widely accepted management controls during its construction and once completed, to ensure that these receptors are not adversely affected. In addition, mitigation measures integral to the proposed processes and plant design will ensure minimisation of dust and noise to ecological receptors in close proximity to the Proposed Development during its operation. A strip of land will be retained on the eastern Site boundary to safeguard existing woodland trees and for landscape and biodiversity enhancement. The Proposed Development's detailed lighting scheme will be developed in consultation with an experienced bat specialist and an isolux plan produced for approval by the LBH. The measures proposed will mitigate any potential adverse ecological effects on off-site receptors thus ensuring compliance with UDP saved policy OL11, OL26 and EC1 and draft Core Strategy policies EM3, EM4 and EM7.

Table 6.1: Proposed Development Sustainability Appraisal**8.0 Natural Environment**

Ref	KPI	Progress	Explanation of Assessment
P 8.5	A net gain in biodiversity and access to nature		The Proposed Development will facilitate the following gains in biodiversity: • The risk of contamination currently posed on-site will be removed through the implementation of a Land Remediation Strategy which will include the eradication of Giant hogweed, an invasive species which has been identified on-site; • Bird and bat boxes will be incorporated into buildings. • The Applicant will explore in consultation with the London Borough of Hillingdon any additional opportunities for off-site biodiversity enhancement, if required. Due to the limited size of the Site and the Proposed Development's operational space requirements, it will not be possible to incorporate any significant areas of soft landscaping that could provide new replacement habitats.
E 8.6	Reduction in areas of deficiency in access to nature		This type of development will not normally be expected to improve access to nature on-site. An ecological assessment of the Proposed Development (ENVIRON UK Ltd, December 2011) has been undertaken and measures proposed to mitigate for any potential adverse effects on ecology. Adoption of these measures will ensure compliance with UDP saved policy EC2.

Conclusion: The Proposed Development will not result in any loss of public open space and it is not predicted to result in any net loss of biodiversity or access to nature and therefore performs well with regards to this KPI.

A landscaping scheme will accompany the planning application and will illustrate how noteworthy on-site features will be retained and enhanced. Along the eastern boundary of the Site, the boundary wall will be set back to safeguard the existing woodland. Viable and useful shrubs and trees will be retained to help screen the Site and additional vegetation will be introduced to enhance the amenity, biodiversity and ecological value of the Site. Mitigation measures integral to the proposed processes and plant (minimisation of dust generation, dust suppression measures, integral noise abatement measures) will ensure minimal impact on ecological receptors in close proximity to the Proposed Development during its construction and operation.

Bird boxes suitable for hole nesting species such as house sparrows and starlings will be incorporated into buildings alongside the Site's boundaries. Taller buildings will include boxes suitable for swifts. The exact number and location of the bird boxes will be decided in conjunction with an experienced ornithologist at the detailed design stage. Proposed buildings situated alongside the Site's boundary could be suitable for the incorporation of bat boxes. Similarly, the precise number and location of bat boxes will be decided in conjunction with an experienced bat ecologist.

The risk of contamination currently posed on-site will be addressed through the implementation of a Land Remediation Strategy. This will also ensure the eradication of giant hogweed

Table 6.1: Proposed Development Sustainability Appraisal**8.0 Natural Environment**

Ref	KPI	Progress	Explanation of Assessment
			Subject to adherence/implementation of ecological mitigation proposed in the Ecological Impact Assessment Report (ENVIRON UK Ltd, December 2011) the Proposed Development will comply with UDP saved policies EC2, EC5 and EC6, as well as UDP saved policy OL11, OL26 and EC1 and draft Core Strategy policies EM3, EM4 and EM7. The Proposed Development does not currently meet the requirements of the London Borough of Hillingdon UDP saved policies EC5 and EC6 in relation to ecological impacts and enhancements. The Applicant will explore in consultation with the London Borough of Hillingdon any additional opportunities for off-site biodiversity enhancement, if required.

Table 6.1: Proposed Development Sustainability Appraisal**9.0 Waste**

Ref	KPI	Progress	Explanation of Assessment
E 9.1	Minimise, reuse and recycle demolition waste on site where practical		The Site has already been cleared and buildings previously present have been demolished. Any concrete found on-site will be processed and re-used, including as sub-base material. Existing bund material will be spread across the Site as recommended in the Proposed Development's Land Remediation Strategy. The bund material will not be taken off site to landfill. Once operational, the Proposed Development will re-use and/or recycle waste arisings from infrastructure works that will otherwise go to landfill. After treatment these will be re-used as secondary aggregates whether directly in the form of type 1, type 4, sand, ballast, graded aggregate or as a raw material in the on-site manufacturing of ready mixed concrete or asphalt. The Applicant has adopted a Company objective to achieve a 'Zero to Landfill' target. The Proposed Development is in accordance with UDP saved policy MIN16 with regards to the provision of premises for the recycling of waste materials.
E 9.2	Specify use of reused or recycled construction materials		Any concrete found on the Site will be processed and reused, including as sub-base material. The structural steelwork to be used in the construction of the plant will consist of circa 75% reused material. Recycled concrete will be supplied from the Applicants other facilities for the construction of the Proposed Development. The re-use and recycling of pavement arisings from infrastructure services underpins the core principle of the development and the Company's Operational Philosophy. Most construction aggregates currently produced by the Applicant are 100% recycled whilst some asphalt mixes can contain up to 70% recycled material.
E 9.5	Recycling facilities are on-site and as easy to access as waste facilities		The Site has been identified as a potentially suitable location as a waste management facility in the Joint West London Waste Plan and as an opportunity site in the Southern Hillingdon Area Action Plan for a recycling centre (Policy SHSA 7). The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy. Recycling facilities will be provided within the office buildings for plastic, paper etc.
P 9.6	Provide facilities to recycle 70% of commercial and industrial waste by 2020		The Applicant is committed to achieving a 'Zero to Landfill' target. As such the Applicant has invested over £12m in a new, state of the art asphalt plant and jetty at Erith and continues to invest at its aggregate processing and recycling facility at Dartford. At Erith, approximately 400,000 tonnes/annum of recycled asphalt is produced and at Dartford up to 300,000 tonnes/annum can be processed and recycled. In addition, the Proposed Development is for the construction and operation of an aggregate recycling plant,

Table 6.1: Proposed Development Sustainability Appraisal**9.0 Waste**

Ref	KPI	Progress	Explanation of Assessment
			which, once established, will enable the re-use and recycling of up to 300,000 tonnes of pavement/road planning arisings from infrastructure services per year. The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy. Therefore, this standard is exceeded. The Proposed Development is in accordance the draft Core Strategy Policy EM11
E 9.7	Recycling facilities should be as easy to access as waste facilities.		The Site has been identified as a potential location for a waste management facility in the Joint West London Waste Plan and as an opportunity site in the Southern Hillingdon Area Action Plan for a recycling centre (Policy SHSA 7). The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy. Recycling facilities will be provided within the office buildings for plastic and paper etc.
P 9.8	Prefabricated and standardised modulation components will be specified		Where practicable prefabricated or module components will be used although several aspects of the plant and equipment are bespoke. 100% structural steel for the plant and the buildings will be prefabricated, as well as fencing. Cladding will be pre-formed and pre-cut off-site thus minimising waste arisings from construction on the Site.
P 9.9	Incorporation of or access to new waste recovery facilities		This standard is not directly relevant to the Proposed Development as any waste product produced through the recycling operations will be is inert. Leading technology will be used in the asphalt plant to allow the use of recycled materials in asphalt manufacturing. The Proposed Development will accept waste arisings from infrastructure works and services that will otherwise go to landfill. These are treated and reused either as secondary aggregates or as a raw material in higher value construction products such as ready mixed concrete and asphalt. The Proposed Development is therefore in accordance with Draft Core Strategy Policy EM11 as it will facilitate the re-use of materials and recycling of aggregates.

Conclusion: The Proposed Development performs well with regards to waste minimisation and diverting wastes from landfill, exceeding one essential standard . Any concrete found on the Site will be reused, particularly as sub-base material. Existing bund material on-site will be re-used in accordance with the recommendations of the Proposed Development's Land Remediation Strategy. The Applicant has a Company objective to achieve 'Zero to Landfill' target. Once operational, the Proposed Development will enable the re-use and recycling of up to 300,000 tonnes of pavement arisings from infrastructure services per year. The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy. The Site has been identified as a potential location as a waste management facility in the Joint West London Waste Plan and as an opportunity site in the

Table 6.1: Proposed Development Sustainability Appraisal			
9.0 Waste			
Ref	KPI	Progress	Explanation of Assessment
Southern Hillingdon Area Action Plan for a recycling centre (Policy SHSA 7).			
The Proposed Development is in accordance with UDP saved policy MIN16 with regards to the provision of premises for the recycling of waste materials and with Draft Core Strategy Policy EM11 as it will facilitate the re-use of materials and recycling of aggregates.			

Table 6.1: Proposed Development Sustainability Appraisal**10.0 Sustainable Construction**

Ref	KPI	Progress	Explanation of Assessment
E 10.1	Reduce waste during demolition and construction, and sort waste stream on site where practical		The use of pre-fabricated units and materials will reduce waste generation during the construction of the Proposed Development. In addition, a Construction Waste Management Plan will be prepared to guide on-site control, management and prevention of waste generation. Any concrete found on-site will be processed and re-used, including as sub-base material. Existing bund material will be spread across the Site as recommended in the Proposed Development's Land Remediation Strategy and thus avoid off-site disposal at landfill. During operations, the Proposed Development will accept waste arisings from various sites that will otherwise go to landfill. The waste arisings will be treated (any combination of processing, screening and washing) and re-used as secondary aggregates, to either return to origin sites in the form of type 1, type 4, recycled sand, ballast, graded aggregate or as a raw material in the manufacture (on site) of ready mixed concrete or asphalt. The Proposed Development is in accordance with Draft Core Strategy Policy EM11 as it addresses waste development at all stages of development, ensuring waste is managed towards the upper end of the waste hierarchy.
E 10.2	Reduce the risk of statutory nuisance to neighbours through site management		During the construction phase, noise and dust emissions will be effectively controlled by employing standard, but stringent management practices. These will be implemented through adherence to a Construction Method Statement/Construction Environmental Management Plan to be agreed with LBH.
E 10.3	Developers comply with London's BPG on the control of dust and emissions during demolition and construction		No demolition works will be undertaken on-site. During the construction phase, dust emissions will be effectively controlled by employing standard, but stringent management practices. These will be implemented through adherence to a Construction Method Statement/Construction Environmental Management Plan to be agreed with LBH. Approved contractors will be instructed by the Applicant to comply with Best Practice.
P 10.4	Contractors comply with London's BPG on the control of dust and emissions during		As for E 10.3.

Table 6.1: Proposed Development Sustainability Appraisal**10.0 Sustainable Construction**

Ref	KPI	Progress	Explanation of Assessment
	demolition and construction		
E 10.5	Compliance with protected species legislation		The Applicant will comply with any appropriate legislation during the course of the Site's development and its activities thereafter and will therefore comply with UDP saved policy EC2. The Site itself is not covered by any particular nature or heritage designation. However, some of its surroundings are considered to be sensitive and therefore the emerging development proposals have been designed to ensure that potential for impacts on these receptors are avoided, minimised and where unavoidable, mitigated such that their effect will not be significant.
E 10.6	Developers sign up to a Considerate Constructors Scheme		The Applicant actively participates in the national Considerate Constructors Scheme and expects performance beyond compliance certificates from all sites as a minimum standard. The Applicant has gained 18 consecutive gold awards in the City of London scheme. The Proposed Development will be submitted into the national scheme.
P 10.7	Contractors sign up to a Considerate Constructors Scheme		Contractors will be expected to adhere with the Considerate Constructors Scheme and the Proposed Development will be submitted to the national scheme.

Conclusion: The Proposed Development performs very well with regards to the sustainable construction standards and meets all essential and preferred standards. Waste arisings during construction will be minimised and dust and noise emissions will be effectively controlled by employing stringent management practices. These will be implemented through adherence to a Construction Waste Management Plan, as well as a Construction Method Statement/Construction Environmental Management Plan to be agreed with LBH. The Applicant will comply with any appropriate legislation during the course of the Site's development and its activities thereafter. The Applicant actively participates in the national Considerate Constructors Scheme and expects performance beyond compliance certificates from all sites as minimum standards. The Applicant has gained 18 consecutive gold awards in the City of London scheme. The Proposed Development will be submitted into the national scheme.

The Proposed Development is in accordance with Draft Core Strategy Policy EM11 through addressing waste development at all stages of development, ensuring waste is managed towards the upper end of the waste hierarchy. The Proposed Development will also comply with UDP saved policy EC2 in relation to adherence to protected species legislation.

7 Conclusions

7.1 Overall Performance

Ensuring the delivery of sustainability initiatives and aspirations are key to achieving a sustainable development. To ensure that the sustainable performance of the Proposed Development, as assessed in the appraisal, is carried forward into the detailed design stage a number of sustainability commitments have been identified.

The performance of the Proposed Development against Project Essential Standards (E) and, where applicable, Preferred Standards (P) has been assessed on the basis of information provided with the planning application. This performance is summarised in Table 7.1.

Table 7.1: Proposed Development Performance against Sustainability KPIs									
Re-use of Land									
E 1.1	E 1.2	E 1.3	P 1.4						
Natural Systems									
E 2.1	E2.2	E2.3	E 2.4	E 2.5					
Energy									
E 3.1	E 3.2	E 3.3	P 3.4	E 3.5	P 3.6	E 3.7	P 3.8	P3.9	P3.10
Materials									
P 4.1	E 4.2	P4.3	P4.4	E4.5	P4.6	P4.7	E4.8	P4.9	
Water									
E 5.3	P 5.4								
Pollution									
E 6.1	E 6.3	E 6.4	P 6.5	E 6.6	E 6.7	P 6.8	E 6.9		
Comfort									
E 7.1	P 7.2	E 7.3	E 7.4	P 7.7	P 7.8				
Natural Environment									
E 8.1	P 8.2	E 8.3	E 8.4	P 8.5	E 8.6				

Waste									
E 9.1	E 9.2	E 9.5	P 9.6	E 9.7	P 9.8	P 9.9			
Sustainable Construction									
E 10.1	E 10.2	E 10.3	P 10.4	E 10.5	E 10.6	P 10.7			

7.2 Targets Achieved

Overall, the Proposed Development is considered to be contributing positively to the Mayor's sustainability objectives.

All essential standards that can be addressed at this stage of design have been or will be met or exceeded, with the exception of:

- E 2.5 - Facilities for bicycles and electric vehicles are provided: Facilities for bicycles will be provided. Allowance for vehicle charging points has been made in the power infrastructure so that they could be retrofitted should demand be identified in the future.
- E 3.3 - Consideration has been given to the ranking method for heating and where necessary cooling systems: This standard is not directly applicable for this type of development which has very specific power needs. The provision of 118 m² of photovoltaic panels is proposed to achieve 25% carbon emissions reduction for the two office buildings within the Proposed Development.
- E 6.3 - All new gas boilers should produce low levels of NO_x: The Proposed Development will not include any gas boilers. However, the rotary dryers used within the asphalt plant will be fired using gas oil as a fuel. The dryers will be fitted with the latest design in burners to reduce fuel consumption, ensure efficient burn with optimum control. At this stage it is assumed that the dryers will be fuelled by gas oil. However, the possibility of installing a gas supply to the Site may be investigated, which has the potential to further reduce emissions.
- E 8.3 - New public open space is created in an area of deficiency: It is not appropriate for this type of development to provide publicly accessible open space on-site.. However, the Proposed Development will retain a 5m strip of land to the east of the Site for landscape and biodiversity enhancement and ensure existing woodland planting off-site is safeguarded.
- E 8.6 - Reduction in areas of deficiency in access to nature: It is not appropriate for this type of development to provide publicly accessible open space on site. An ecological assessment of the Proposed Development (ENVIRON UK Ltd, December 2011) has been undertaken and measures proposed to mitigate for any potential adverse effects on ecology. Adoption of these measures will ensure compliance with UDP saved policy EC2.

The Proposed Development exceeds relevant targets and demonstrates good practice in the following essential standards:

- E 4.2 - > 50% of timber from FSC (or a CPET) and balance from temperate sources: Little if any timber used in proposed construction. Where and if it is required, timber will be FSC sourced or recycled from elsewhere.

- E 4.8 - A strategy to minimise new aggregates has been prepared: The Proposed Development will be constructed using recycled secondary aggregates at every possible opportunity, avoiding the use of new aggregates as far as possible. New concrete will use recycled aggregates. Sub-bases will comprise reused processed concrete, in part sourced from the Site. Once operational, the Proposed Development itself will enable the re-use and recycling of up to 300,000 tonnes of pavement arisings from infrastructure services per year.
- E 6.7 - 50% Attenuation of the undeveloped site's surface water run off at peak time: The Proposed Development will attenuate 100% of the undeveloped sites surface water runoff at peak times through the use of infiltration techniques. The Site will effectively discharge at greenfield rates.

The Proposed Development will also achieve sixteen preferred standards and of these sixteen, two exceed the targets. These relate to:

- P 4.9 - 10% total value of materials used will be derived from recycled and reused content: The structural steelwork to be used will contain circa 75% recycled material whilst sub-bases will comprise 100% recycled aggregate. The concrete is likely to contain a minimum of 10% recycled material (all on site asphalt surfacing will contain a minimum 20% recycled materials). The Proposed Development will be constructed using recycled secondary aggregates at every possible opportunity.
- P 9.6 - Provide facilities to recycle 70% of commercial and industrial waste by 2020: The Applicant is committed to achieving a 'Zero to Landfill' target. As such the Applicant has invested over £12m in a new, state of the art asphalt plant and jetty at Erith and continues to invest at its aggregate processing and recycling facility at Dartford. At Erith, approximately 400,000 tonnes/annum of recycled asphalt is produced and at Dartford up to 300,000 tonnes/annum can be processed and recycled. In addition, the Proposed Development is for the construction and operation of an aggregate recycling plant, which, once established, will enable the re-use and recycling of up to 300,000 tonnes of pavement/road planning arisings from infrastructure services per year. The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy.

Targets Not Achieved

7.3 Targets not Achieved

The Proposed Development would not achieve four preferred standards that relate to:

- zero carbon emission development;
- London's hydrogen economy;
- using material with no embodied impact during construction or specification; and
- using greywater for all non-potable uses.

7.4 Commitment to Investigate

There is a commitment to investigate the use of solar powered lighting in the Proposed Development, which relates to preferred standard P3.6.

There is a commitment to investigate preferred standard P 4.7, relating to the distance that 50% of construction materials will be sourced from (the target is 35m miles from the Site). The Site will be constructed using recycled secondary aggregates at every possible

opportunity, including in concrete. Any concrete found on-site will be processed and re-used on Site in sub-bases. All construction materials will be sourced from within 35 miles of the Site except possibly for structural steelwork. The target of 50% could potentially therefore be met but it cannot currently be confirmed.

With regards to preferred standard *P 8.5 - A net gain in biodiversity and access to nature*, it is considered that the Proposed Development has potential to deliver a net benefit for local biodiversity. The Applicant will explore in consultation with the London Borough of Hillingdon any additional opportunities for off-site biodiversity enhancement, if required.

Although preferred standard P1.4 is achieved through the provision of Living Roofs further additions to this standard are being investigated with relation to the use of new roof space. The Proposed Development will contain three roofs which could potentially be used for rainwater harvesting. Rainwater could be harvested from the Aggregate Storage Bays for use in the aggregate washing process and for dust suppression. Rainwater could also be harvested from the office building and weighbridge/plant control office for use in flushing WCs. Living (brown) roofs are proposed on the aggregate storage bays.

7.5 Conclusion

In conclusion, this Sustainability Statement demonstrates that there is a clear commitment to sustainable development principles within the Proposed Development and by the Applicant. Although the Proposed Development is for an Aggregate Recycling and Asphalt Plant, which has specific energy, access and layout requirements, the proposals have been assessed against the Mayor for London's SDC SPG, which is largely relevant to the development. The Proposed Development is considered to be contributing positively to the sustainability objectives as set out by the Mayor's SDC SPG.

The Sustainability Statement demonstrates that the Proposed Development is in accordance with all relevant adopted and draft planning policies, with the exception of the London Borough of Hillingdon UDP saved policies EC5 and EC6 in relation to ecological impacts and enhancements as some ecological mitigation measures remain to be finalised. The Applicant will explore in consultation with the London Borough of Hillingdon any additional opportunities for off-site biodiversity enhancement, if required.

The Proposed Development is inherently sustainable and once operational, it will allow for the re-use and recycling of up to 300,000 tonnes of pavement arisings from infrastructure services per year which could otherwise be sent to landfill. The Proposed Development will support several London Boroughs' policy objectives in meeting the upper end of the waste management hierarchy.

The Applicant is committed to sustainable development through its operations and is working towards achieving an objective to recycle 100% of recovered arisings from construction and service operation to achieve a 'Zero to Landfill' target.

The Construction Recycling Alliance has named FM Conway the 'Recycling Company of the Year for 2011' and the company has been awarded numerous industry awards in recent years recognising health and safety and sustainability achievements, and excellence, innovation and best practice in Highways.

Annex A: Sustainability Framework

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
Essential	1.1	100% of development on previously developed land.	UDP Policy OL21: The local planning authority will support proposals to reclaim/restore damaged, derelict and otherwise degraded land subject to such proposals according with the policies of this plan and other environmental considerations. UDP Policy OL22: Proposals relating to damaged, derelict and otherwise degraded land should be accompanied by an assessment of its current condition and of any adverse effects on adjacent land. Such an assessment should also indicate, as far as is practicable, measures that will negate or contain the causes of the land's unsatisfactory condition.
Essential	1.2	Development density should be maximised based on local context, design principles, open space provision and public transport capacity.	Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 1. Prioritising higher density development in urban and town centres that are well served by sustainable forms of transport.
Essential	1.3	Existing buildings are reused where practicable	UDP Policy OL21: The local planning authority will support proposals to reclaim/restore damaged, derelict and otherwise degraded land subject to such proposals according with the policies of this plan and other environmental considerations. Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 12. Giving preference to development of previously developed land to avoid the loss of further green areas.
Preferred	1.4	A proportion of the new roof space is used for outdoor space, green roofs or renewable energy	Draft Core Strategy Policy BE1: The Council will require all new development to achieve reductions in carbon dioxide emission in line with the London Plan targets through energy efficient design and effective use of low and zero carbon technologies. Where the required reduction from on-site renewable energy is not feasible within major developments, contributions off-site will be sought. The Council will seek to merge a suite of sustainable design goals, such as the use of

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
			SUDS, water efficiency, lifetime homes, and energy efficiency into a requirement measured against the Code for Sustainable Homes and BREEAM Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 13. Promoting the use of living walls and roofs, alongside sustainable forms of drainage to manage surface water run-off and increase the amount of carbon sinks.
Natural Systems			
Type	Ref	London SPG Standard	Local Policy
Essential	2.1	All developments to follow the principles of good design set out in London Plan policy 4B.1.	UDP Policy BE13 Development will not be permitted if the layout and appearance fail to harmonise with the existing street scene or other features of the area which the local planning authority considers it desirable to retain or enhance. UDP Policy BE25 The local planning authority will seek to ensure modernisation and improvement of industrial and business areas through careful attention to the design and landscaping of buildings and external spaces. Where appropriate it will seek improved vehicular and pedestrian access and circulation routes through the area, and environmental improvements. UDP Policy OE1 Planning permission will not normally be granted for uses and associated structures which are, or are likely to become, detrimental to the character or amenities of surrounding properties or the area generally, because of: (i) the siting or appearance; (ii) the storage or display of vehicles, goods, equipment or other merchandise; (iii) traffic generation and congestion; (iv) noise and vibration or the emission of dust, smell or other pollutants, unless sufficient measures are taken to mitigate the environmental impact of the development and ensure that it remains acceptable.
Essential	2.2	Minimise need for and use of mechanical ventilation, heating and cooling systems.	Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 14. Promoting the inclusion of passive design measures to reduce the impacts of

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
			urban heat effects.
Essential	2.3	Buildings provide for flexibility of uses during their projected operational lives.	Draft Core Strategy Policy BE1: The Council will require all new development to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods, where people enjoy living and working and that serve the long-term needs of all residents.
Essential	2.4	Buildings adapt to and mitigate for the effects of the urban heat island and the expected increases in hot dry summers and wet mild winters.	Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 14. Promoting the inclusion of passive design measures to reduce the impacts of urban heat effects.
Essential	2.5	Design in facilities for bicycles and electric vehicles.	Draft Core Strategy Policy EM8: Actively contribute to the promotion of sustainable transport measures such as vehicle charging points and the increased provision for vehicles with cleaner transport fuels;
Energy			
Type	Ref	London SPG Standard	Local Policy
Essential	3.1	Carry out an energy demand assessment.	None
Essential	3.2	Maximise energy efficiency	None
Essential	3.3	Major commercial and residential developments to demonstrate that consideration has been given to the following ranking method for heating and where necessary cooling systems: * Passive design * Solar water heating; then * Combined heat and power for heating and cooling (i.e. trigeneration) , preferably fuelled by renewables; then * Community heating and cooling; then * Heat pumps; and then * Gas	Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 14. Promoting the inclusion of passive design measures to reduce the impacts of urban heat effects.

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
		condensing boilers	
Preferred	3.4	The following ranking method: * solar water heating; then * combined heat and power/trigeneration, preferably fuelled by renewables; then * community heating. New developments should always be connected to existing community heating networks preferably fuelled by renewables where feasible	Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 14. Promoting the inclusion of passive design measures to reduce the impacts of urban heat effects.
Essential	3.5	Wherever on site outdoor lighting is proposed as part of a development it should be energy efficient, minimising light lost to sky	None
Preferred	3.6	Outdoor lighting and all other electricity supplied street furniture should be solar powered and minimise light lost to the sky.	None
Essential	3.7	Carbon emissions from the total energy needs (heat, cooling and power) of the development should be reduced by at least 10% by the on-site generation of renewable energy.	Draft Core Strategy Policy EM1: The Council will ensure that climate change mitigation is addressed at every stage of the development process by: 8. Encouraging the installation of renewable energy for all new development in meeting the carbon reduction targets savings set out in the London Plan. Identify opportunities for new sources of electricity generation including anaerobic digestion, hydroelectricity and a greater use of waste as a resource.
Preferred	3.8	Major developments should be zero carbon emission developments (ZEDs)	None
Preferred	3.9	Lighting, heating and cooling controls should enable services to operate efficiently under different loadings and allow for localised control.	None

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
Preferred	3.10	Major developments should make a contribution to London's hydrogen economy through the adoption of hydrogen and/or fuel cell technologies and infrastructure.	None
Materials			
Type	Ref	London SPG Standard	Local Policy
Preferred	4.1	No construction nor specification of material with high embodied impact to be used (as defined by the summary ratings in the Green Guide to specification) unless a compelling whole life energy or technical case for its use exists.	Draft Core Strategy Policy EM11: The Council will promote waste as a resource and encourage increased re-use of materials and recycling and seek to maximise the use of existing waste management sites through intensification or co-location of facilities.
Essential	4.2	50% timber and timber products from Forest Stewardship Council (FSC) source and balance from a known temperate source.	None
Preferred	4.3	>90% timber FSC sourced (or a CPET)	None
Preferred	4.4	No peat or natural weathered limestone used in buildings or landscaping.	None
Essential	4.5	Insulation materials containing substances that contribute to stratospheric ozone depletion or with the potential to contribute to global warming must not be used.	None
Preferred	4.6	Before demolition, appraisal of maximising recycling of materials by use of ICE's Demolition Protocol	None
Preferred	4.7	50% of construction materials by mass to be sourced from a factory/plant, quarry, wharf,	None

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
		railhead or recycling centre within 35 miles of site wherever feasible.	
Essential	4.8	Minimise use of new aggregates.	None
Preferred	4.9	10% total value of materials used to be derived from recycled and reused content in products and materials selected.	None
Water			
Type	Ref	London SPG Standard	Local Policy
Essential	5.3	100% metering of all newly built property	None
Preferred	5.4	Use of greywater for all non potable uses.	Draft Core Strategy Policy EM1: Climate Change Adaptation and Mitigation which seeks adaptation measures including consideration of the whole water cycle impact,
Pollution and Flooding			
Type	Ref	London SPG Standard	Local Policy
Essential	6.1	Demonstrate that adverse impacts of noise have been minimised, using measures at source or between source and receptor in preference to sound insulation at the receptor, wherever practicable.	UDP Policy EC3 The local planning authority will require proposals for development in the vicinity of sites of nature conservation importance to have regard to the potential effects on such sites of changes in the water table and of air, water, soil and other effects which may arise from the development. UDP Policy OE3 Buildings or uses which have the potential to cause noise annoyance will only be permitted if the impact is mitigated within acceptable levels by engineering, lay-out or administrative measures. UDP Policy MIN23 Schemes for mineral extraction, mineral processing, landfill, waste handling or treatment must demonstrate at all adjacent noise sensitive locations that: (i) the impact of noise is mitigated to the satisfaction of the minerals planning authority having regard to the noise limits specified in mpg11 and local circumstances; and (ii) any permitted operations will be subject to an independent noise monitoring and

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
			control scheme throughout their duration, and the results submitted to the local planning authority. Where appropriate the minerals planning authority will seek an agreement to achieve the aims of the policy. Draft Core Strategy Policy EM8: Land, Water, Air and Noise Quality which states that LBH will seek to promote the maximum possible reduction in noise levels and to minimise the number of people potentially affected.
Essential	6.3	All new gas boilers should produce low levels of NO _x	None
Essential	6.4	Take measures to reduce and mitigate exposure to air pollution.	UDP Policy EC3 The local planning authority will require proposals for development in the vicinity of sites of nature conservation importance to have regard to the potential effects on such sites of changes in the water table and of air, water, soil and other effects which may arise from the development. UDP Policy LE1 All proposals for industry (B2) development will be assessed by taking into account other policies of this plan and, where appropriate, the following considerations: (iii) the availability and capacity of public transport facilities to serve proposals for employment intensive uses; (iv) the ability of the road system, as existing or taking due account of committed improvements, to accommodate at normal peak hours the additional traffic generated; Draft Core Strategy Policy EM8: • All major development within the Air Quality Management Area (AQMA) should demonstrate air quality neutrality (no worsening of impacts) where appropriate; • Actively contribute to the promotion of sustainable transport measures such as vehicle charging points and the increased provision for vehicles with cleaner transport fuels; • Provide a management plan for ensuring air quality impacts can be kept to a minimum.

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
Preferred	6.5	Low emission developments that are designed to minimise the air quality impact of plant, vehicles and other sources over the lifetime of the development	Draft Core Strategy Policy EM8: All development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.
Essential	6.6	Use Sustainable Drainage Systems (SDS) measures, wherever practical.	UDP Policy OE7 In the areas liable to flooding permission will not be granted for new development or the intensification of existing development unless a developer is prepared to implement flood protection measures as part of the proposed development to a standard satisfactory to the council, in consultation with the environment agency and where appropriate, other drainage bodies. UDP Policy OE8 Planning permission will not be granted for new development or redevelopment of existing urban areas which would result in an increased flood risk due to additional surface water run-off, unless the proposed development includes appropriate attenuation measures to a standard satisfactory to the council, in consultation with the environment agency and, where appropriate, other drainage bodies. UDP Policy OE10 In areas of potential flooding or inadequate capacity of the foul and surface water sewerage system to receive the additional discharge from the development, a phased development may be required to match the provision of infrastructure so that the existing system is not overloaded to the detriment of the community as a whole. Draft Core Strategy Policy EM6: Flood Risk Management' states that LBH "...will require new development to be directed away from away from flood zones 2 and 3 in accordance with the principles of Planning Policy Statement 25 [now replaced by the NPPF]. The subsequent Site Allocations DPD will be subjected to the Sequential Test in accordance with PPS25. Sites will only be allocated within flood zones 2 or 3 where there are overriding issues that outweigh flood risk. In these instances, policy criteria will be set requiring future applicants of these sites to demonstrate that flood risk can be suitably mitigated. The Council will require all development across the borough to use sustainable urban drainage systems (SUDS) unless demonstrated that it is not viable. The Council will encourage SUDS to be linked to water efficiency methods."
Essential	6.7	Achieve 50% attenuation of the undeveloped site's surface water run off at peak times.	
Preferred	6.8	Achieve 100% attenuation of the undeveloped site's surface water run off at peak times	

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
Essential	6.9	Mitigate any negative impact on the microclimate of existing surrounding public realm and buildings to meet the Lawson criteria for wind comfort and safety.	None
Comfort and Security			
Type	Ref	London SPG Standard	Local Policy
Essential	7.1	Inert and low emission finishes, construction materials and carpets and furnishings used where practical	None
Preferred	7.2	Design buildings for indoor comfort of users.	None
Essential	7.3	All plant and machinery should be accessible for easy maintenance	None
Essential	7.4	All developments meet the principles of inclusive design, adopting the principles of SPG 'Accessible London: Achieving an Inclusive Environment'	UDP Policy LE1 All proposals for industry (B2) development will be assessed by taking into account other policies of this plan and, where appropriate, the following considerations: (vi) the provision for access by people with disabilities and other accessible facilities both to and within buildings.
Preferred	7.6	Developments are e-enabled	None
Essential	7.7	Principles of 'Secure by Design' have been used to develop the design	UDP Policy BE18 The design of developments with footway frontages, overlooking bus stops or other transport interchanges, or facing open space, should take account of the need to ensure that windows overlook pedestrian spaces and avoid the creation of hidden recesses adjacent to such spaces, such that pedestrian security is enhanced and effective policing is not prejudiced. The design should also ensure that pedestrian safety is not endangered. UDP Policy LE7 in relation to planning benefits, the local planning authority will where appropriate, seek to ensure that development proposals for industrial, warehousing and business uses provide planning benefits related to the scale and type of the development. Such planning benefits could, for example, take the form

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
			of environmental improvements, including security.
Natural Environment			
Type	Ref	London SPG Standard	Local Policy
Essential	8.1	No net loss of public open space	The Grand Union Canal borders the proposed development site to the east and is identified as a green chain. UDP Policy OL11 in respect of green chains, the local planning authority will:- (i) encourage the provision and improvement of suitable recreational facilities; (iv) seek to improve public access to and through the area; UDP Policy LE7 in relation to planning benefits, the local planning authority will where appropriate, seek to ensure that development proposals for industrial, warehousing and business uses provide planning benefits related to the scale and type of the development. Such planning benefits could, for example, take the form of: • environmental enhancement of and public access to canalside areas; • buildings, open spaces, pedestrian access and other facilities for use by the community, including the provision of public art and facilities for arts, culture and entertainment activities; • trees, landscaping and nature conservation; Draft Core Strategy Policy EM4, in respect of Open Space and Informal Recreation the local planning authority will seek to protect existing tree and landscape features and enhance open spaces with new areas of vegetation cover (including the linking of existing fragmented areas).
Preferred	8.2	A net gain in public open space	UDP Policy OL11: In respect of green chains, the local planning authority will:- (i) encourage the provision and improvement of suitable recreational facilities; (ii) maintain their positive contribution in providing a visual and physical break in the built-up area; (iii) conserve and enhance the visual amenity and nature conservation value of the
Essential	8.3	New public open space is created in an area of deficiency	

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
			landscape; (iv) seek to improve public access to and through the area; and (v) promote an overall identity for green chains throughout the borough. Draft Core Strategy Policy EM3 in respect of the Blue Ribbon Network, the local authority will continue to promote and contribute to the positive enhancement of the strategic river and canal corridors through the Biodiversity Action Plan, the Thames River Basin Management Plan, and developer contributions where appropriate. The Council will work with partners, adjacent local authorities and interested bodies to enhance the local character, visual amenity, ecology, transportation, leisure opportunities and sustainable access to rivers and canals. Draft Core Strategy Policy EM4, in respect of Open Space and Informal Recreation the local planning authority will seek to protect existing tree and landscape features and enhance open spaces with new areas of vegetation cover (including the linking of existing fragmented areas).
Essential	8.4	No net loss of biodiversity and access to nature	UDP Policy OL26 The local planning authority will protect trees and woodlands and encourage the preservation, proper management and in appropriate locations the extension of woodlands. UDP Policy EC1 The local planning authority will not permit development which would adversely affect the integrity of sites of special scientific interest, or be unacceptably detrimental to sites of metropolitan or borough (grade i) importance for nature conservation, designated local nature reserves and other nature reserves. If development is proposed on or in the near vicinity of such sites, applicants must submit an ecological assessment where considered appropriate by the local planning authority to demonstrate that the proposed development will not have unacceptable ecological effects. Draft Core Strategy Policy EM3 in respect of the Blue Ribbon Network, the local authority will continue to promote and contribute to the positive enhancement of the strategic river and canal corridors through the Biodiversity Action Plan, the Thames River Basin Management Plan, and developer contributions where appropriate. The Council will work with partners, adjacent local authorities and interested bodies to enhance the local character, visual amenity, ecology, transportation, leisure

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
			opportunities and sustainable access to rivers and canals. Draft Core Strategy Policy EM7: Biodiversity and Geological Conservation' which states that LBH will protect and enhance all Sites of Importance for Nature Conservation, in particular Sites of Metropolitan and Borough Grade I importance. Draft Core Strategy Policy EM4, in respect of Open Space and Informal Recreation the local planning authority will seek to protect existing tree and landscape features and enhance open spaces with new areas of vegetation cover (including the linking of existing fragmented areas).
Preferred	8.5	A net gain in biodiversity and access to nature	UDP Policy EC5 In determining planning applications the local planning authority may require certain on-site ecological features to be retained in new developments and seek to enhance the nature conservation and ecological interest of sites or create new habitats through the use of planning conditions attached to planning permissions or through planning agreements negotiated with developers. UDP Policy EC6 Where existing derelict, damaged and temporarily vacant land has ecological, educational, recreation and social potential for the enjoyment and protection of nature or where justified by the ecological interest of the land or the needs of the local area, the local planning authority will seek to ensure the land or part of it is maintained temporarily or permanently as wildlife habitat."
Essential	8.6	Reduction in areas of deficiency in access to nature	UDP Policy EC2 The local planning authority will promote nature conservation as a positive land use and will take nature conservation interests into account in considering proposals for development of land especially within sites of borough (grade ii) and local importance, as defined by the London ecology unit. The protection of species afforded by the wildlife and countryside act 1981 (amended 1985) will be a material consideration. Where appropriate the local planning authority may ask applicants to submit an ecological assessment before it determines development proposals.
Waste			
Type	Ref	London SPG Standard	Local Policy
Essential	9.1	Minimise, reuse and recycle demolition waste	UDP Policy MIN16 the local planning authority in considering development

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
		on site where practical	proposals will encourage the provision and improvement of premises and facilities for efficient and environmentally acceptable disposal, recycling, energy recovery or other handling and treatment of waste materials, subject to other policies in the plan.
Essential	9.2	Specify use of reused or recycled construction materials	None
Essential	9.5	Recycling facilities are on site and as easy to access as waste facilities	None
Preferred	9.6	Provide facilities to recycle 70% of commercial and industrial waste by 2020	Draft Core Strategy Policy EM11: The Council will aim to reduce the amount of waste produced in the Borough and work in conjunction with its partners in West London, to identify and allocate suitable new sites for waste management facilities within the Joint West London Waste Plan to provide sufficient capacity to meet the apportionment requirements of the London Plan. The Council will require all new development to address waste management at all stages of a development's life from design and construction through to the end use and activity on site, ensuring that all waste is managed towards the upper end of the waste hierarchy.
Essential	9.7	Recycling facilities should be as easy to access as waste facilities.	None
Preferred	9.7	Prefabricated and standardised modulation components will be specified	None
Preferred	9.8	Incorporation of or access to new waste recovery facilities	Draft Core Strategy Policy EM11: The Council will promote waste as a resource and encourage increased re-use of materials and recycling and seek to maximise the use of existing waste management sites through intensification or co-location of facilities.
Sustainable Construction			
Type	Ref	London SPG Standard	Local Policy
Essential	10.1	Reduce waste during demolition and construction, and sort waste stream on site	Draft Core Strategy Policy EM11: The Council will require all new development to address waste management at all stages of a development's life from design and

Re-use of Land and Buildings			
Type	Ref	London SPG Standard	Local Policy
		where practical	construction through to the end use and activity on site, ensuring that all waste is managed towards the upper end of the waste hierarchy.
Essential	10.2	Reduce the risk of statutory nuisance to neighbours through site management	None
Essential	10.3	Developers comply with London's BPG on the control of dust and emissions during demolition and construction	None
Preferred	10.4	Contractors comply with London's BPG on the control of dust and emissions during demolition and construction	None
Essential	10.5	Compliance with protected species legislation	UDP Policy EC2 The protection of species afforded by the wildlife and countryside act 1981 (amended 1985) will be a material consideration.
Essential	10.6	Developers sign up to a Considerate Constructors Scheme	None
Preferred	10.7	Contractors sign up to a Considerate Constructors Scheme	None