

SCOPING REQUEST REPORT

Land South of Rover Way, Cardiff CF24 5PH

Proposed Asphalt Batching Plant and associated
infrastructure

Harsco Metals Group Limited

SLR Ref: 416.09604.00001
Version No: FINAL
March 2019



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1.0 Introduction

1.1 Purpose of Report

This Scoping Request Report has been prepared by SLR Consulting Limited on behalf of Harsco Metals Group Limited ('the Applicant') to facilitate the adoption of a Scoping Opinion by Cardiff Council ('the Council') and to guide the content of any subsequent application submission for an Asphalt Batching Plant and associated infrastructure at the Celsa Steelworks site on Land South of Rover Way, Cardiff CF24 5PH. Further information regarding the development proposals are provided within Section 4 of this Report.

This Scoping Request Report outlines the statutory context of the submission, a description of the site location and land use, information on the proposed development works, a description of the environmental setting of the site (i.e. identifying any sensitive receptors), an opinion of the likely significant effects and other information pertinent to the Screening Request.

1.2 The Applicant & Landowner

The application site is within the freehold ownership of Cardiff Council, whilst Celsa Steel UK has a long leasehold interest in the site and operate the existing steelworks located on site. The application will be submitted on behalf of Harsco Metals Group Limited, who will operate the asphalt batching plant on behalf of, and utilising materials provided by, Celsa Steel UK.

1.2.1 Harsco Metals Group Limited

Working with customers across the metals, mining and energy sectors, Harsco Metals & Minerals ('Harsco') provides logistics and environmental services for industry. By working onsite under long term service contracts at over 130 customer locations across 32 countries, Harsco have developed an understanding of each industry they operate in.

Harsco began life last century by offering steelmakers a metal recovery service for slag, and expanded into other business areas to meet the growing need for recycling in the metals industry, and beyond. Today, Harsco's activities span across multiple industrial sectors, providing beneficiation to a wide range of waste materials.

Harsco's resource recovery solutions help minimize the environmental impact of production and derive economic value to the producer. Harsco process by-products and waste materials to recover valuable metal or mineral elements, and commercialize the Co-Products.

Harsco are not tied to any technology. Instead, Harsco approach the waste issue from the perspective of the material being treated and possible end applications for the Co-Products after processing. Taking into account local market conditions and environmental regulations, Harsco select a process to achieve the required performance using the best available technologies. These range across mechanical, hydro, thermal, or biological processes.

1.2.2 Celsa Steel UK

Celsa Steel UK ('Celsa Steel') is the largest producer of reinforcement in the United Kingdom and one of the largest manufacturers of other steel long products. From the facilities at Rover Way, Cardiff, Celsa Steel produce and deliver around 1.2 million tonnes of finished product per annum, mainly to the UK and Irish

markets.

Celsa Steel's facilities consist of a state-of-the-art smelt shop built in 2006, and two production facilities: one for reinforcing products and wire rod, the other for merchant bar and light sections.

Celsa Steel employs over 500 staff and several hundred sub-contractors in South Wales.

1.3 SLR Consulting

Established in July 1994, SLR is an independent and employee controlled international environmental consultancy that has an unrivalled reputation for providing high quality tailored services. SLR provides multidisciplinary advice from in-house experts on a wide range of strategic and site specific environmental and sustainability issues. In particular, SLR specialises in providing strategic advice to both public and private sector clients and has a broad base of blue-chip customers in the energy, waste management, planning and development, infrastructure, manufacturing and mining sectors. SLR is 1000 strong Worldwide with approximately 380 employees in the UK business spread throughout the 24 Offices.

SLR is recognised by the Institute of Environmental Management and Assessment (IEMA) as a recommended consultancy to review Environmental Statements ('ES') for Environmental Impact Assessments ('EIA'). Further information on SLR can be found on its corporate web site at www.slrconsulting.co.uk.

1.4 Report Structure

This Scoping Request Report is structured as follows:

- Section 2 – Background and Legislative Context;
- Section 3 – Site Location and Land Use;
- Section 4 – Description of Development;
- Section 5 – Approach to Environmental Statement;
- Section 6 – Environmental Issues to be 'Scoped In';
- Section 7 – Environmental Issues to be 'Scoped Out'; and
- Section 8 – Closure.

2.0 Background & Legislative Context

This Section of the document seeks to detail the background to the submission of this Scoping Request Report and how the content of this report interrelates to the requirements laid out within The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 ('the Regulations').

2.1 Screening Opinion

On its own merits, the proposed development would not fall to be considered under either Schedule 1 or Schedule 2 of the regulations as 'EIA Development'. However, subsequent to pre-application discussions with Cardiff Council and during the consideration of a Screening Request (ref. SC/19/00001/MJR), it is understood that the local planning authority is of the view that an EIA is required given that the application site sits within the wider Celsa Steel Site, the need to consider potential in-combination and cumulative effects, and given the site's proximity to a sensitive area (the Severn Estuary).

The Celsa Steel site is considered to potentially fall within either Schedule 1 Regulation 4:

*" (a) Integrated works for the initial smelting of cast-iron and steel;
(b) Installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes."*

Or, Schedule 2 Regulation 4:

*" (a) Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting;
(b) Installations for the processing of ferrous metals
(i) hot-rolling mills;
(ii) smitheries with hammers;
(iii) application of protective fused metal coats;
(c) Ferrous metal foundries;
(d) Installations for the smelting, including the alloyage, of non-ferrous metals, excluding precious metals, including recovered products (refining, foundry casting, etc.);
(e) Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process
..."*

With regard to criteria contained within Schedule 3 of the Regulations, consideration of these has been made during the undertaking of the Scoping exercise outlined below. In brief, these criteria relate to the 'characteristics of development', the 'location of development' and the 'types and characteristics of the potential impact'.

It should be noted that no formal Screening Opinion has been adopted by Cardiff Council at the time of submitting this Scoping Request. However, a range of consultation responses have been received with regard to the Screening exercise (ref. SC/19/00001/MJR) and have been duly considered in forming the content of this Scoping Request Report.

Whilst no formal Screening Opinion has been adopted, the applicant has confirmed an intention to undertake a voluntary Environmental Impact Assessment in support of the application proposals.

2.2 Legislative Requirements

The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 ('the Regulations') came into force on 16th May 2017. The findings of the Environmental Impact Assessment undertaken on the proposed development will be reported in an Environmental Statement ('ES') prepared in accordance with Schedule 4 of the Regulations.

In accordance with Regulation 14 (1), a person who is minded to make an EIA application may ask the relevant planning authority to state in writing their opinion as to the scope and level of detail of the information to be provided in the environmental statement (a 'Scoping Opinion'). Regulation 14 (2) continues by confirming that a Scoping Request must include:

- A plan sufficient to identify the land;
- A brief description of the nature and purpose of the development, including its location and technical capacity;
- An explanation of the likely significant effects of the development on the environment; and
- Such other information or representations as the person making the request may wish to provide or make.

The above information is provided within the subsequent sections of this Scoping Request Report. When detailing the topics to be 'Scoped In' to the EIA, information has been provided regarding any key legislative, guidance, planning policy or background information that has informed the methodology proposed. The report also details the baseline and methodology of the assessments considered necessary to assess the environmental impact of the proposed development.

In addition to the above, Section 5 of this report also details the 'Approach to the EIA', including overarching methodological approaches relating to the structure and format of the Environmental Statement, consideration of alternatives and the assessment of cumulative impacts.

2.3 The Scoping Exercise

When forming a Scoping Opinion, the Council should be proportional in their approach to the EIA. It should be remembered that there are three main purposes in undertaking the scoping exercise:

- To focus the EIA on the environmental, social and economic issues and potential impacts which need the most thought and attention;
- To provide a means to discuss methods of impact assessment and reach agreement on the appropriate way forward; and
- To identify those issues which are unlikely to need detailed study and will not, therefore, form part of the EIA.

The Scoping process should address the concerns of all of those likely to be affected by the proposals, including statutory and non-statutory consultees, and the public. Good practice also requires that the opinion of stakeholders should also be sought at this stage. Stakeholders should be asked to identify their concerns,

sources of and gaps in information, and additional options or sites that may not have been considered.

The content of this report is intended to provide the Council and the relevant consultees with the information necessary to come to an opinion on the issues that should be addressed in the ES. The value of all consultees and stakeholders in inputting into the Scoping Opinion is recognised by the Applicants and SLR, and both parties will be pleased to discuss any aspect of the proposed scheme with any relevant organisation.

3.0 Site Location and Land Use

3.1 Site Location & Description

The application site, which is approximately 11.7 hectares (117,165m²) in area, is located entirely within the administrative boundary of Cardiff Council and the electoral ward of Splott. The site is located within the eastern confines of Cardiff, approximately 2.5km east of the city centre and immediately south of Tremorfa. A scale copy of the site location plan is provided within Appendix 1 for your reference.

Figure 1: Site Location Plan Extract

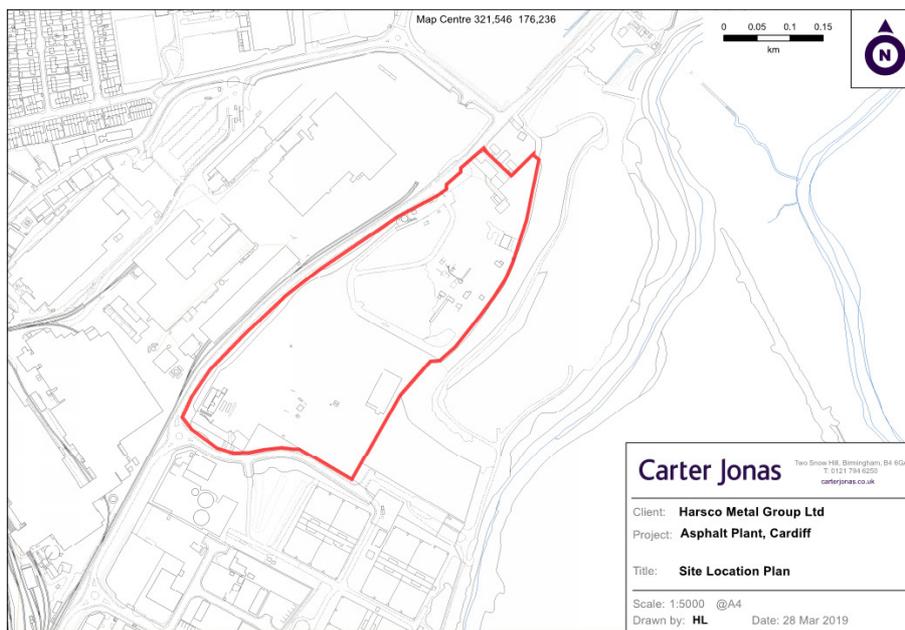


Figure 2: Existing Celsa Steel Site Layout (Aerial Photo)



The site is located within the southern extent of the wider Celsa Steel UK site on Rover Way. This southern operational area is bound by Rover Way to the north and west, beyond which is the remainder of the Celsa

Steel UK site, including the principal smelt shop and other industrial buildings. Tide Fields Road bounds the site to the south, beyond which is a Welsh Water works. Finally, the site is bound by an unnamed track to the east, beyond which is Cardiff Motocross Centre MX and the Severn Estuary.

Access into the southern Celsa Steel site is taken either from the northern boundary, via Rover Way, or via the southern boundary, via Tide Fields Road.

The asphalt plant is to be located within a 1 hectare (10,022m²) plot within the north-eastern confines of the southern Celsa Steel UK site. This plot, further details of which are provided within Section 4.0 of this Scoping Request Report, is bound by internal haul roads along its north-western and south-western bounds. The asphalt plant area is then bound by further operational waste sorting land to the north-east and scrub land to the south-east, beyond which is the Cardiff Motocross Centre MX and the Severn Estuary.

3.2 Policy & Designations

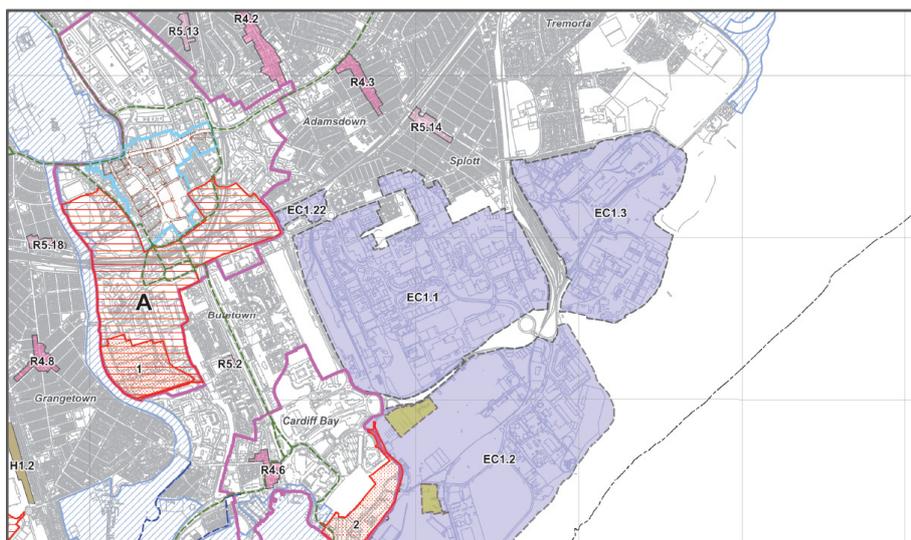
In accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004 the application should be determined in accordance with the Development Plan unless material considerations indicate otherwise.

The Development Plan for the administrative area comprises the Cardiff Local Development Plan (adopted 2016) and associated Supplementary Planning Guidance documents. Other material considerations include Planning Policy Wales (PPW) (Edition 10, December 2018), Technical Advice Notes (TANs) and Welsh Circulars.

3.2.1 Cardiff Local Development Plan

The Cardiff Local Development Plan, as adopted in 2006, provides the statutory framework for the development and use of land within Cardiff over the plan period (2006-2026). Within the Proposals Map, the site is identified as being located within allocation EC1.3

Figure 3: Extract of Local Development Plan Proposals Map

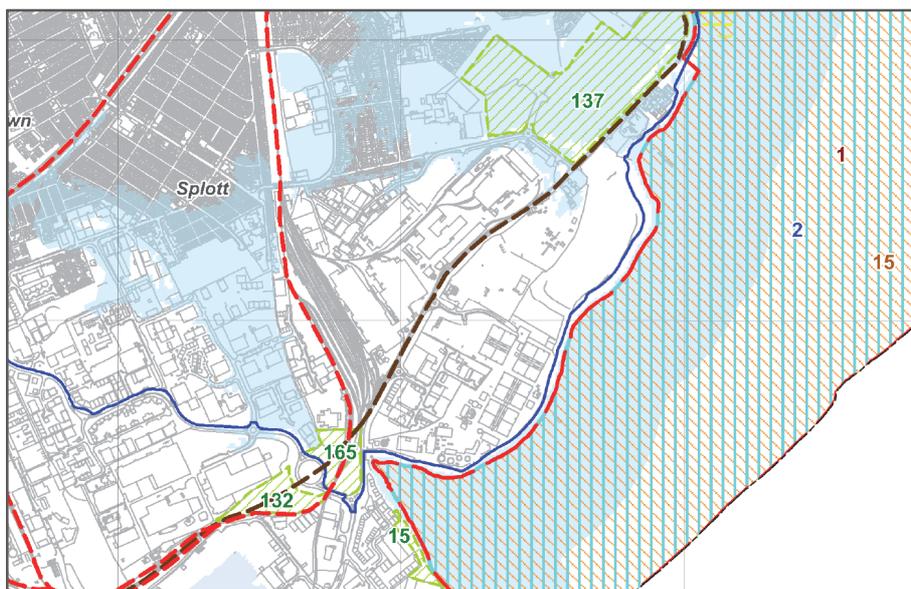


Policy EC1 relates to 'Existing Employment Land' and states that *"The city's existing employment areas outside of the Central and Bay Business Areas (as designated on the Proposals Map) will be protected for B Use Class employment generating uses (together with appropriate ancillary and/or complementary uses and activities as referred to in Policy EC2) as described in the table below"*

Site Ref	Site Name	Primary Use/Activity	Status
EC1.3	Rover Way (Celsa Steel Works, Tremorfa Industrial Estate, Seawall Road)	B2, B8	Primary

In addition to the above, the Local Development Plan also contains a ‘Constraints Map’ which identifies areas which have been allocated for the purposes of environmental, cultural or heritage related protection. An extract of this ‘Constraints Map’ is provided within Figure 4 below.

Figure 4: Extract of Local Development Plan Constraints Map



As can be noted from Figure 4 above, the Severn Estuary is designated as a Special Protection Area and RAMSAR, Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC).

4.0 Description of Development

The proposed development will seek permission for an Asphalt Batching Plant and associated infrastructure at the Celsa Steel Works site, Rover Way, Cardiff. As detailed within Section 3.0 above, the asphalt plant is to be located within a 1 hectare (10,022m²) plot within the north-eastern confines of the southern Celsa Steel UK site.

4.1 Layout & Equipment

4.1.1 Layout

The layout of the proposed Asphalt Batching Plant is shown within Figure 5 below and provided to scale within Appendix 2. Please note that the proposed application will not include the interim aggregate production area also shown within the Proposed Site Layout Plan.

Figure 5: Proposed Site Layout



The plant will be located within the central confines of the red line site area, with an area to the west utilised for vehicular access, fill and departure. Within the eastern confines of the site, a range of bundled materials storage bays will be located along the boundary, thereby leaving a central manoeuvring area for vehicles.

There is an existing concrete pad on site but this is relatively dilapidated and no longer fit for purposes. As such, the proposed works would include for the removal of this existing pad and laying of a new concrete pad suitable to support the weight of the Asphalt Batching Plant and associated HGVs. The plant will also be anchored to this pad by way of minor piles and anchor points (i.e. tensile cables to a fixed point).

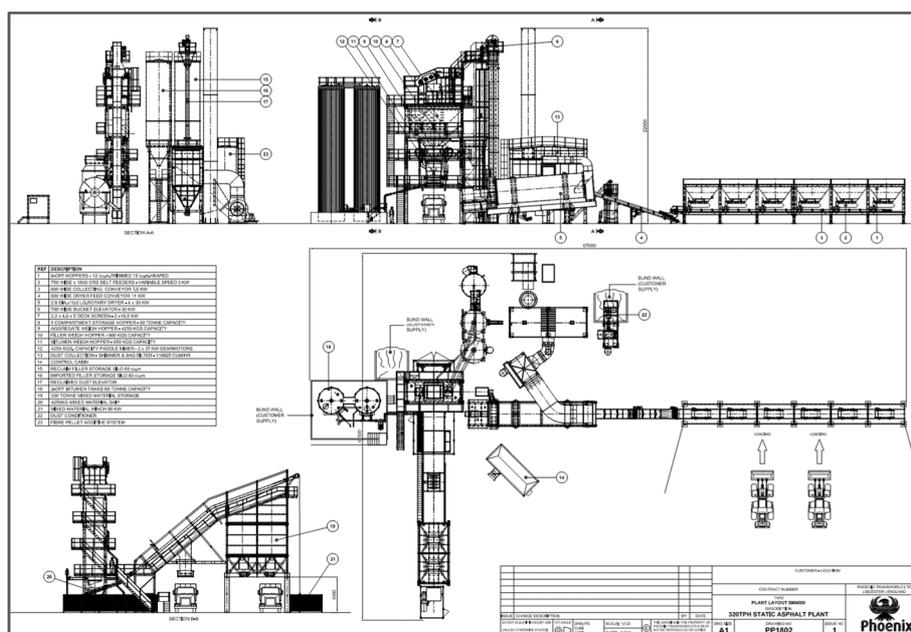
4.1.2 Equipment

The batching plant itself will comprise of a range of storage silos, feed and weigh hoppers, belt feeders, conveyors, a rotary dryer, bucket elevator, deck screens, paddle mixer, dust collection skimmer and fill bag, bitumen tanks, fibre pellet additive system and a control cabin. Further information regarding the individual

components of the plant are provided within the 'Parker Plant Limited, Starmix 4000 Technical Specifications' document in Appendix 3.

Whilst operating in a set process, the plant is modular to allow for replacement parts and/or 'bolt-on' additions to improve functionality where appropriate. The technical drawings of the Asphalt Batching Plant are shown within Figure 6 below and are provided to scale within Appendix 4.

Figure 6: Technical Drawings of Asphalt Plant



4.2 Batching Plant Process

The asphalt plant has the capacity to produce 250 tonnes per hour of asphalt materials. The process uses slag (a waste generated on site by Celsa's production process) which has been crushed and screened to remove the metallic fraction leaving a quality aggregate. The arising slag aggregate will be fed into the asphalt plant with the addition of bitumen, Road Asphalt Planning's, cellulose, fibres and filler in varying proportions to produce different specifications of asphalt.

The Asphalt Batching Plant process can be broken down into clear stages

- The first step is to feed unheated-raw aggregates into different bins of the cold aggregate feeder bins at the south-eastern most extent of the plant (note that the aggregates are separated into separate bins subject to size and quality);
- Cold feeder gates on individual bins control the flow of aggregates into the plant itself, with the amount of each aggregate inputted into the plant dependent on the mix specified by the purchaser;
- The aggregates are then transferred to a rotary drier by way of a charging conveyor and the aggregates are heat-dried;
- At this stage primary and secondary dust collectors operate to collect settling heavy dust particles to prevent dispersion into the surrounding environment, with discharge via the chimney stack. The dust

extraction system includes a pre-skimmer and interconnecting pipework to the rotary drier screen, mixer, elevator and filler silo. The bag filter unit incorporates a collecting hopper to store the collected dust which is used in the asphalt mix. A Continuous Emissions Monitor will be installed, and the plant specification is designed to achieve particulate emissions of less than 25mg/m³;

- Following heating, the aggregates are transferred to the tower unit by way of a bucket elevator;
- At the top of the tower unit is multiple layered screening unit which the hot aggregates pass through to get re-separated and stored into different bins based on their sizes;
- From the hot storage bins, the aggregates are then weighed and discharged in to the mixing unit. In the mixer, aggregates will be mixed with bitumen and filler material;
- The bitumen is stored and heated within separate tanks adjacent to the tower unit. Bitumen is pumped to the weighing hopper prior to discharge. This bucket weighs it before addition into the mixer;
- Filler material is added in a separate container and it is pumped to its weighing hopper for subsequent discharge into the mixing unit;
- After mixing, the hot mix asphalt is either discharged into waiting trucks or into the mixed material storage silos;
- All processes identified above are controlled by way of computerized program and monitoring equipment located within the control cabin. This cabin is manned by a suitably trained member of staff at all times, who can manually override the plant in cases of emergency.

The asphalt is produced in accordance with the Slag Quality Protocol to a required specification enabling it to achieve 'end of waste status'. The process enables the recovery of slag from the steel making process thus reducing reliance on disposal to landfill. By recovering waste materials, the need to source virgin materials is also reduced. It is intended that Harsco will operate this plant under Celsa's environmental permit.

Figure 7: Photograph of similar Asphalt Batching Plant (Rotherham, South Yorkshire)



4.3 Access & Materials

Access into the site is strictly controlled to operational personnel. No parking will be provided on site and it is envisaged that operational staff would either use public transport or park in the Celsa Steel Works car park to the north of Rover Way, accessible via Seawall Road.

Delivery vehicles and mixer trucks will access the site via the internal haul roads within the Celsa Steel Works site, gaining access to and from the highway via Tide Fields Road which bounds the site to the south. No vehicular access will be available via the access onto Rover Way given that this is utilised by larger vehicles associated with the wider Steel Works operations.

Whilst aggregate and bitumen will need to be imported to site, it is proposed that waste finings (crushed slag) from the Celsa Steel Works would be utilised in the Asphalt Batching Plant process. This ensures that the waste materials located within the wider Celsa Steel Works site have a functional re-use and also reduces the level of highways movements needed to serve the Asphalt Plant.

5.0 Approach to the Environmental Impact Assessment

5.1 Methodology

The EIA will be prepared in accordance with the requirements of the Regulations and with reference to best practice guidance, including that published by the Institute of Environmental Management and Assessment ('IEMA'). All information required or reasonably required to identify the significant environmental effects of the development, as defined by Schedule 4 of the Regulations, will be provided as part of the ES.

The assessment will also include consideration of relevant policy and legislation of relevance whilst also considering comments received through both the scoping exercise and any pre-application consultation undertaken.

Each technical assessment will follow a consistent approach and format, which will include the following details:

- Review of relevant policy, legislation and guidance;
- A detailed topic specific assessment methodology, consultation undertaken, and confirmation of how the assessment relates to the standardised significance criteria adopted for the EIA (please see below);
- Consideration of baseline conditions, including identification of sources of information, site history, current environmental conditions and future trends/anticipated changes to current conditions that could be anticipated without the scheme (i.e. the 'future baseline');
- Identification of the potential effects, including a summary of those resources/receptors likely to be affected, the sensitivity of those receptors to accommodate change; the magnitude (degree) of change resulting from the proposal; the change of events or pathways linking cause to effect and a prediction in the significance of effects in terms of nature, extent and magnitude including whether it is direct/indirect, short/long term, temporary/permanent, and adverse/neutral/beneficial in nature;
- The scope for incorporating mitigation measures to avoid, reduce, remedy or compensate for any identified effects and the need for any monitoring measures; and
- Identification of any effects remaining after mitigation (the 'residual effects').

The effects of individual environmental matters will be transcribed, where appropriate, against a common list of significance criteria for the EIA. However, the use of the common list of significance criteria will be dependent upon any specific legislative and assessment guidance requirements for each topic (i.e. ECIA or GLVIA3). At this stage, it is proposed that the common list of significance criteria will comprise:

- Substantial / Major beneficial;
- Moderate beneficial;
- Minor beneficial;

- Neutral/ Negligible;
- Minor adverse;
- Moderate adverse; and
- Substantial / Major adverse.

5.2 Structure and Format of ES

The findings of the EIA will be set out in the ES which will comprise three volumes, as follows:

- Volume 1 – Main Report containing the individual ES Chapters;
- Volume 2 – Technical Appendices; and
- Volume 3 – Non-Technical Summary.

5.3 The Team

The 2017 EIA Regulations requires that the EIA be prepared by those with sufficient expertise to ensure the completeness and quality of the statement. It is confirmed that the team proposed to be involved in the EIA have the relevant experience and competency to carry out the technical assessment work. The ES will include a statement on confirming how the requirements of the Regulations have been met.

A copy of SLR's IEMA Certificate is provided within Appendix 5, whilst the following consultant team will be responsible for the preparation of the technical assessments and, if appropriate, the chapters of the ES itself:

- Landscape and Visual SLR Consulting Limited
- Land Quality Terra Firma Wales & SLR Consulting Limited
- Air Quality SLR Consulting Limited
- Noise and Vibration SLR Consulting Limited
- Flood Risk and Drainage SLR Consulting Limited
- Ecology SLR Consulting Limited
- Transport SLR Consulting Limited
- Heritage and Archaeology SLR Consulting Limited

5.4 Associated Application Submission

A range of supporting information will be provided with the application submission, including a Planning Statement, Design and Access Statement and Application Drawings. Other technical assessments may also be submitted with the application that sit outside of the EIA, these may include a Landscape and Visual Report, an

Archaeology Desk Based Assessment, an Ecological Impact Assessment and Protected Species Survey Reports (if required).

5.5 Consideration of Alternatives

Schedule 4 of the 2017 EIA Regulations requires a consideration of the 'reasonable alternatives' for the development which have been studied by the Applicants and the main reasons for the choices which have been made, taking account of environmental effects.

The EIA will include a review of:

- The likely effects in the event that the development does not come forward ('the no development scenario'); and
- Details of alternatives considered with regard to location and the design of the development itself.

The consultant team has been involved in the process of design iteration and emergence of the development proposals. This process will be documented as part of the EIA. It is not necessary to provide consideration of theoretical alternatives (i.e. alternatives not considered through the design process).

5.6 Committed Developments and Cumulative Effects

In accordance with the 2017 EIA Regulations, the EIA will include an assessment of any direct and indirect cumulative effects arising from the Development when considered alongside any other developments in the area surrounding the site. The objective is to identify any combined effects from the Development or effects from several developments; and if, whilst individually the effects may be insignificant, could when considered together cause a further significant direct or indirect impact requiring mitigation.

In relation to other development, best practice dictates that cumulative assessments of this nature should have regard to those schemes which are 'reasonably foreseeable' (i.e. usually those under construction or with an extant planning permission). The assessment is only capable of being carried out based on the information available at the time of assessment.

The assessment should focus only where there is the potential for significant cumulative effects and, for this development, an initial review of potential developments requiring review has therefore focused on those developments which due to their proximity or scale are most likely to give rise to cumulative effects. Consideration has also been given to the areas within which cumulative effects are most likely.

The cumulative assessment will therefore include a review of the potential for effects when the scheme is considered alongside the following committed developments located within the immediate vicinity of the application site:

- **Land at Rover Way, Pengam (The Cardiff Motocross Centre MX)** – The removal of fill material and the construction of a biomass power plant (up to 9.5MW) and a maximum of 130,000 sq ft of industrial accommodation (B8 Use Class), new access roads and associated landscaping works – **application ref. 17/02130/MJR;**
- **Land at Rover Way, Pengam (The Cardiff Motocross Centre MX)** – Amendments to Condition 28 to incorporate minor amendments to access layout previously approved under 17/02130/MJR –

application ref. 19/00244/MJR; and

- **SIMS Metal UK Metal Recovery Plant, Rover Way, Pengam** – Proposed industrial building (Class B2) to house scrap metal sorting machinery, in addition to related works, associated with existing site use – **application ref. 18/02065/MJR.**

Notwithstanding, given the interrelationship of the application proposals with the wider Celsa Steel Works site, consideration of the effects associated with the Steel Works will already be contained within the technical assessments given that this forms part of the baseline environment.

If the authority is aware of any other proposals that it considers will need to be assessed in terms of potential cumulative effects, it would be appreciated if these could be identified as part of the EIA Scoping Opinion duly adopted.

6.0 Environmental Issues to be ‘Scoped In’

Regulation 14 of the 2017 EIA Regulations establishes those matters which need to be provided to assist the relevant planning authority in forming an EIA scoping opinion. Accordingly, this section provides a summary of the likely issues, the potential effects and the proposed methodological approach to the assessment for the identified areas of interest.

In considering the scope of the EIA, it is important to identify that the focus of Schedule 4 of the Regulations is the significant effects. Other lesser effects need not be addressed as part of the EIA process.

Regard will be had to relevant national, strategic and local planning policy guidance, namely Planning Policy Wales (PPW) (Edition 10, December 2018), Technical Advice Notes (TANs) and Welsh Circulars, the Cardiff Local Development Plan (adopted 2016) and associated Supplementary Planning Guidance documents.

The Development will be assessed during both the construction and operational phases of development direct and indirect effects will be identified; as well as any secondary, cumulative, short, medium and long term, positive and negative effects of the development.

6.1 Land Quality

6.1.1 Introduction

The site is an established industrial site with a long history of materials storage and recovery. The site, along with land to the immediate west, south and east, is located on land that was reclaimed following the placement of variable fill materials over the existing tidal mud flats in the 1950/60s period. The fill materials placed in the site area are thought to be of the order of 7-8m thick based on nearby British Geological Survey borehole data.

6.1.1 Guidance, Legislation and Background Information

The primary regulatory regime under which potentially contaminated land is managed in Wales is Planning Policy Wales (PPW). The PPW addresses minimising and managing environmental risks and pollution. The summary below provides the framework for dealing with contaminated land indicating that:

“The planning system should guide development to lessen the risk from natural or human-made hazards, including risk from land instability and land contamination. The aim is not to prevent the development of such land, though in some cases that may be the appropriate response. Rather it is to ensure that development is suitable and that the physical constraints on the land, including the anticipated impacts of climate change, are taken into account at all stages of the planning process...”

The above summary recognises the interaction between the planning system and the regime for contaminated land introduced under Part IIA of the Environmental Protection Act 1990, referring to guidance issued by the Welsh Government. Considering development management and contaminated land, the guidance adds:

“Planning decisions need to take into account:

- the potential hazard that contamination presents to the development itself, its occupants and the local environment; and

- the results of a specialist investigation and assessment by the developer to determine the contamination of the ground and to identify any remedial measures required to deal with any contamination.”

In terms of assessing risk from contaminated land the overarching guidance document is the Environment Agency’s Model Procedures for the Management of Land Contamination, Contaminated Land Report 11 (CLR11) (Environment Agency, 2004). This provides a useful risk based evidence approach for determining whether effects are significant or not. However, it is important to note that there is no commonly accepted guidance within CLR11 or on how practitioners should utilise the CLR11 risk assessment approach in EIA.

6.1.2 Establishing the Baseline

Given the known history of the site there is a requirement to better define the underlying fill and natural geology with a specific focus on:

- Chemical quality of the fill/soil to determine whether unacceptable concentrations of contamination could exist that could impact the proposed development and which should be taken account of within the proposed development, e.g. in relation to materials management.
- Groundwater level and quality to determine whether the depth and quality of the groundwater could be a material consideration within the proposed development and in relation to potential contaminant migration now and in the future.
- Determination of soil gas and vapour quality to assess whether soil gas/vapour concentrations could be a material consideration and whether the proposed development could give rise to unacceptable gas/vapour migration risk.

It is considered appropriate therefore that a ground (borehole) investigation and programme of groundwater and soil gas/vapour monitoring is undertaken to establish the current baseline conditions at the site and the potential implications for the proposed development and adjacent properties/environment post development if appropriate controls or mitigation measures are not implemented.

6.1.3 Study Area & Sensitive Receptors

The site layout and features (now and in the developed state) are set out in Sections 3.0 and 4.0 above. Potential receptors to ground contamination, both in the undeveloped and developed state, are considered to be:

- Human health – primarily for personnel involved in the development phase, but also in the developed state. Risks could extend to site visitors and adjacent properties, but the nature of the proposed site use and the adjacent land uses would suggest the risks are minimal. Assessment of the risk to all human health receptor groups will, however, require assessment.
- Controlled waters – this would comprise groundwater under the site and the nearby coastal waters south of the site. The identification of existing groundwater contamination, coupled with the potential for migration of contaminants to the nearby surface water will require further assessment and consideration.
- Ecological receptors – these would comprise sensitive species within the coastal waters and where relevant, exposed mud flats with impacts most likely arising from contaminant migration via

groundwater flows.

6.1.4 Potential Effects

Given the nature of the proposed development and the known history of land reclamation, it is considered that further assessment of the potential for effects arising during the construction and operational phases of the development.

Construction Phase

The primary effects are likely to arise from the disturbance of contaminated fill materials during:

- Earthworks, e.g. during re-profiling, buried services installation which could give rise to short term risks arising from dust and odour generation.
- Foundation construction – disturbance of contaminated fill materials giving rise to dust and/or odour issues, creation of preferential routes for contaminant migration and inappropriate re-use of fill materials, e.g. during landscaping works.

Operational Phase

In the development phase, the potential for unacceptable effects to arise is considered minimal, but the presence of contaminants within the fill, e.g. explosive gases or flammable vapours, could give rise to risks to site users and the development.

An additional consideration will be surface water management and in particular infiltration into the underlying fill giving rise to unacceptable risks of groundwater impact and contaminant migration.

6.1.5 Assessment Methodology

Given the uncertainty associated with the nature of the fill underlying the site further consideration of the contamination risks is considered necessary as set out below.

Construction Phase

Given the uncertainty associated with the nature of the fill underlying the site, a programme of assessment/investigation and monitoring comprising the following elements is considered appropriate:

- Preparation of a Preliminary Land Quality Risk Assessment report which provides relevant site information and includes a Conceptual Model for potential contamination impacts at the site.
- Design of an appropriate borehole investigation with monitoring well installation.
- Sampling of fill/soil samples to log the physical properties of the materials and to allow subsequent laboratory testing.
- Measurement of groundwater levels from installed wells.
- Sampling of groundwater for chemical quality assessment.

- Measurement of soil gas (e.g. methane, carbon dioxide, oxygen) and vapour (e.g. from petroleum contamination) concentrations.
- Analysis of soil and groundwater samples to determine the concentrations of a wide range of contaminants including heavy/phytotoxic metals, petroleum hydrocarbons, polyaromatic hydrocarbons, asbestos fibres, inorganic contaminants.
- Preparation of a detailed assessment report which identifies the key issues of concern and the mechanisms by which unacceptable concentrations of contaminants can be addressed within the scheme within the context of a revised Conceptual Model.

Operational Phase

Once developed, it is anticipated that the site would have minimal impacts on the environment from ground contamination assuming all necessary remediation measures identified during the construction phase have been addressed and appropriate controls for site operations are undertaken, e.g. in compliance with an Environmental Permit.

6.1.6 Indicative Mitigation Measures

At this stage it is not possible to determine what mitigation measures will be necessary, but typically for a development of the type proposed on a site where potential ground contamination could exist, the following mitigation measures would be undertaken:

- An appropriate level of assessment/characterisation of the underlying fill materials (as set out in Section 6.1.5).
- Excavation of unacceptable areas of contamination identified from the above works with either removal from site for disposal and/or treatment onsite to allow re-use or disposal as appropriate.
- Installation of soil gas/vapour control measures in buildings and other areas of confined spaces to eliminate hazardous/explosive situations.
- Placement of hardstanding over areas of the site to reduce dust generation potential and to allow management of surface water.
- Appropriate management of surface water.

6.1.7 Summary

Overall, it is considered that whilst ground contamination could be present at the site due to the historical land reclamation activities and possibly former industrial uses, with appropriate assessment and mitigation works, it is currently considered that the proposed development can be successfully achieved with no or minimal long term risk to adjacent properties and the wider environment.

6.2 Air Quality

The proposed development will result in emissions to air that are considered potentially significant and require assessment. The following sections address the key legislation, policy and guidance, potential effects, the methodology by which effects will be assessed, and likely mitigation measures.

6.2.1 Legislation, Policy and Guidance

The following represent the key items of legislation, policy and guidance of relevance to the air quality assessment:

- Air Quality Standards (England and Wales) Regulations 2010 provide a transposition of the Air Quality Framework Directive, and transpose the Fourth Daughter Directive within Wales;
- Section 82 of the Environment Act 1995 (Part IV) that confers Cardiff Council Local Air Quality Management responsibilities and powers;
- Conservation of Habitats and Species Regulations 2010 which introduces the precautionary principle for protected areas (Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)). (Guidance on assessing the impacts of air pollutants on designated sites has been issued by NRW in relation to this);
- Part III of the Environmental Protection Act (EPA) 1990 (as amended) contains the main legislation on Statutory Nuisance and allows local authorities and individuals to take action to prevent a statutory nuisance including smoke, fumes, dust and smells emitted from industrial processes;
- Environmental Permitting (England and Wales) Regulations 2016 - Industrial process emissions to air, such as those from the proposed facility are regulated under the EP Regulations which seek to prevent or minimise emissions to air, with a view to achieving a high level of environmental protection;
- Planning Policy Wales (2018) sets out the policy context in relation consideration of air quality within the planning system in Section 6.7 'Air Quality and Soundscape'; and
- Cardiff Local Development Plan 2006 – 2026 includes a specific policy addressing air quality - EN13: Air, Noise, Light Pollution and Land Contamination.

6.2.2 Establishing the Baseline

A review of baseline air quality conditions at the site will be undertaken by reference to:

- Cardiff Council Local Air Quality Management reports and monitoring data;
- National monitoring networks;
- Defra background air quality maps; and
- The Air Pollution Information System in relation to baseline levels at designated ecological sites (Severn Estuary).

No site-specific air quality, dust or odour monitoring will be undertaken, reliance on the data sources above is considered sufficient to characterise the baseline.

6.2.3 Study Area & Sensitive Receptors

The surrounding area includes both relevant human exposure locations and designated ecological receptors as

follows:

- the closest residential areas are Tremorfa and Splott which are relevant exposure locations for both short term and long term (annual mean) air quality standards. These areas would be considered in terms of potential exposure to dust during the construction phase and plant emissions (combustion gases, particulate and odour) during the operational phase. In terms of the impacts of traffic emissions a selection of representative worst case exposure locations alongside the affected routes would be considered within the assessment; and
- the study area for ecological receptors would be defined on the basis of NRW screening guidance i.e.: SSSI's and local wildlife sites within 2km and European designated sites within 10km. On this basis the primary site for consideration would be the Severn Estuary (SAC, SPA and SSSI).

6.2.4 Potential Effects

Construction Phase

During the construction phase, as a result of dust emissions, potential effects include:

- impacts on amenity due to dust deposition on local receptors;
- impacts on Air Quality Standards for the protection of health as a result of emissions of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM₁₀); and
- impacts on ecological receptors as a result of smothering or chemical effects.

With the effective implementation of standard construction dust mitigation techniques and given the distance to sensitive receptor locations the impacts from construction dust are unlikely to be significant.

The construction phase will generate traffic flow changes on the local road network and therefore there is potential for change in air pollutant concentrations at existing receptor locations as a result of development trips. However these trips are likely to be low in number and are likely to screen out (against IAQM thresholds) and therefore effects are considered unlikely to be significant.

Operational Phase

The potential effects as a result of operation of the asphalt plant will include:

- effects on amenity due to odour emissions;
- effects on Air Quality Standards for the protection of health as a result of combustion (primarily nitrogen oxides) and particulate emissions (due to both plant emissions and emissions from development traffic); and
- effects on Critical Levels and Critical Loads for the protection of ecological receptors primarily as a result of nitrogen deposition.

6.2.5 Assessment Methodology

Construction Phase

The assessment of potential dust impacts, and determination of significance of effect, will be assessed using the approach defined in *'Guidance on the Assessment of Dust from Demolition and Construction'* by the Institute of Air Quality Management (IAQM) (v1.1, 2016).

Construction phase trips will be 'screened' following the 'indicative criterion for assessment' presented within Environmental Protection UK (EPUK) and IAQM *'Land-use planning and development control - planning for air quality'* (v1.2, 2017) i.e.:

- a change in Heavy Duty Vehicle (>3.5t) flows of more than 25 annual average daily traffic (AADT) movements, or a change in Light Duty Vehicle (<3.5t) flows of more than 100 AADT (in or adjacent to an Air Quality Management Area); and
- a change in Heavy Duty Vehicle (>3.5t) flows of more than 100 AADT movements, or a change in Light Duty Vehicle (<3.5t) flows of more than 500 AADT (for other areas).

Operational Phase

Combustion and particulate emissions

Plant emissions will be screened following NRW's *'air emission risk assessment for your environmental permit'* guidance¹. This guidance sets out screening approaches to screen out insignificant effects and identify requirements for further assessment. Where required atmospheric dispersion modelling would be undertaken using the US-EPA AERMOD model in accordance with guidance from NRW. The modelling will incorporate geographical information (mapping, topography, human and ecological receptor locations) and pollutant emission from the plant.

The assessment would include.

- comparison of predicted ground level concentrations with existing air quality and relevant air quality standards and guidelines; and
- comparison of predicted ground level concentrations and deposition with air quality standards for protection of ecological sites (critical levels and critical loads).

Odour

The assessment will be undertaken qualitatively on the basis of the source-pathway-receptor conceptual model following IAQM *'Guidance on the assessment of odour for planning'*, i.e. the magnitude of odour emissions will be qualitatively assessed, and the potential dispersion considered on the basis of prevailing meteorological conditions, combined with the sensitivity of receptors address the likely magnitude of impact and significance of effect.

¹ <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

Traffic Emissions

Operational phase traffic emissions will be subject to IAQM screening as described for construction traffic. Should the operational phase trip generation be significant then detailed assessment would be undertaken using the Cambridge Environmental Research Consultants (CERC) ADMS-Roads air dispersion model, following guidance provided in LAQM.TG(16) to predict concentrations of NO₂ for the various scenarios. The model requires the user to provide various input data, including emissions from each section of road (based upon vehicle flows and vehicle type), and the road characteristic (including road width and street canyon height, where applicable).

The following scenarios would be modelled:

- baseline year on the basis of most recent year with complete datasets for traffic flow, diffusion tube monitoring data and meteorological data with which to carry out model verification, in accordance with LAQM.TG.(16) (if following screening the affected roads do not encompass any with monitoring data with which to verify the model then it is proposed to use generic verification factors based on other studies in the area or nationally);
- Projected Baseline: situation if the scheme is not taken forward (opening year); and
- 'With Development': situation if the scheme is taken forward (opening year).

6.2.6 Indicative Mitigation Measures

Indicative mitigation measures will include:

- construction phase dust mitigation based upon IAQM 'Guidance on the Assessment of Dust from Demolition and Construction';
- particulate abatement (bag filters) on the asphalt plant capable of achieving statutory Emission Limit Values (ELVs) with Continuous Emissions Monitoring (CEMs); and
- a flue releasing at 22m above ground level to disperse combustion gases, residual particulate, and odour. Atmospheric dispersion modelling and assessment of impacts will assess the adequacy of the flue height.

6.2.7 Summary

In summary:

- the construction phase has the potential to result in dust emissions and generate vehicle trips neither of which are considered likely to be significant but will be screened and assessed using Institute for Air Quality Management guidance; and
- plant emissions during operation (combustion gases, particulate and odour) will be assessed using a combination of NRW and IAQM guidance. If required following screening, atmospheric dispersions modelling will be employed to assess impacts at human and ecological receptors. The dispersion modelling will assess the adequacy of the stack height in terms of potential impacts against standards for the protection of human and ecological receptors.

6.3 Noise and Vibration

6.3.1 Introduction

The Development is within the confines of the southern Celsa Steel UK site with noise sensitive receptors to the north on Willows Avenue, including Willows High School. Consequently, it is considered that the effects of noise from the Development upon receptors, during operation, will need to be presented in the ES Chapter.

The following key noise issues will be addressed:

- The effect of any noise generating aspects (fixed plant, on-site traffic movements) of the Development on the nearest sensitive receptors to the Site.

6.3.2 Guidance, Legislation and Background Information

Relevant sections of the following British Standard and guideline documents will be detailed in the ES.

- Significance of Effect:
 - Guidelines for Environmental Noise Impact Assessment, produced by the Institute of Environmental Management and Assessment (IEAM), and published in October 2014.
- Operational Phase:
 - BS4142:2014 Methods for rating and assessing industrial and commercial sound.

6.3.3 Establishing the Baseline

A series of baseline noise measurements at the nearest noise-sensitive receptors would be undertaken at the following locations (See Figure 8):

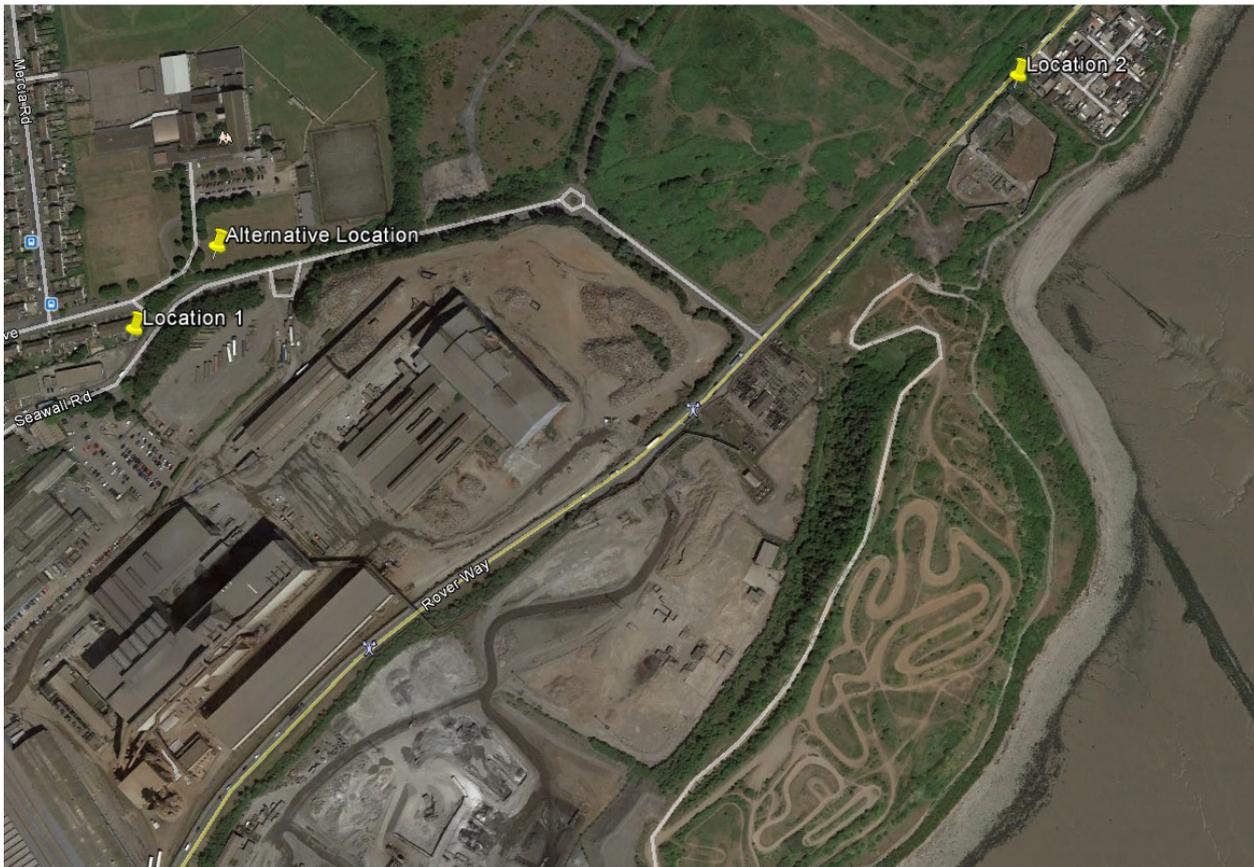
- Location 1 – at the nearest residential property on Willows Avenue; and
- Location 2 – residential receptors to the north east of the site.

Should access not be obtained to a residential property in the area, an alternative location at the school is proposed.

If possible, and if the locations are deemed secure enough, sound level meters would be installed to measure over a 96-hour period including a weekend. Alternatively, sample measurements would be captured to determine a representative background sound level.

The baseline survey would be either part-attended or fully attended by a member of SLR's Acoustics Team to verify that the measured levels are representative of the various noise sources in the area.

Figure 8: Monitoring Locations



6.3.4 Study Area & Sensitive Receptors

The Study Area and sensitive receptors are defined in Figure 8 above.

6.3.5 Potential Effects

Construction Phase

Due to the relatively large separation distances, the assumed short time period of construction works, and daytime only activities, it is considered that construction noise would not lead to a significant impact and a detailed assessment is not required.

Operational Phase

The impact of operational commercial/industrial sound upon residential receptors will be determined with reference to BS4142:2014. In accordance with BS4142:2014:

- Typically, the greater the difference between the rating level and the background sound level the greater the magnitude of the impact;
- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;

- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context; and
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. It is an indication that the specific sound source has a low impact when the rating level does not exceed the background sound level, depending on the context.

Based on the above the impact of operational noise upon residential receptors is as detailed in Table 1.

Table 1: Operational Noise Residential Receptors – Impact Magnitude

Magnitude	Description
Major	Rating level is 10dB(A) or more above the background
Moderate	Rating level is between 6 and 9dB(A) above the background
Minor	Rating level is between 1 and 5dB(A) above the background
None	Rating level is between 0 and 10dB(A) or more below the background

6.3.6 Assessment Methodology

Operational Phase

The sound levels generated by plant associated with the Development would be predicted at the nearest noise-sensitive locations using the proprietary software-based noise model, CadnaA, which implements the full range of UK calculation methods.

The measured background sound levels will then be compared to the plant rating levels and assessed in accordance with BS4142:2014, which would also incorporate the observations made by the surveyor regarding the context of each location, to determine if fixed plant at the site is likely to give rise to adverse impacts at the nearest residential properties.

A subjective opinion of the fixed plant acoustic features will also be included within the assessment; this may include penalties for tonal, impulsive, and intermittent aspects of the noise being generated by the plant.

6.3.7 Indicative Mitigation Measures

The assessment would indicate whether mitigation measures are required to reduce any identified impacts; measures could include, but are not limited to, plant enclosures and barriers.

6.3.8 Summary

Noise from the operation of the proposed development could have a negative impact on nearby noise-sensitive receptors. A background sound survey will be undertaken to establish the existing noise climate. Predicted noise levels from the proposed operations would be compared to background noise levels to determine the scale of any potential noise impact.

6.4 Flood Risk and Drainage

6.4.1 Introduction

With reference to the Development Advice Maps (DAM) for Wales² the proposed Asphalt Plant and associated screening operation are shown to lie within Flood Zone B defined as areas '*known to have flooded in the past*', with a small area of the wider site to the north of the application site shown to be within Flood Zone C2 which is defined as an area at risk of flooding '*without significant flood defences*'. Given the proximity to the Severn Estuary, the flood risk to the site is likely to be predominantly tidal.

Parts of the proposed Asphalt Plant and associated screening operation are shown to be at 'low' risk of surface water flooding.

It will therefore be important to establish the flood risk to the proposed development and to ensure appropriate mitigation measures are incorporated into the design and operational procedures for the plant.

The management and disposal of surface water runoff from the proposed development will also have to be considered to ensure that there would be no adverse impacts on potentially sensitive receptors arising from an increase in runoff and/or a deterioration in water quality.

6.4.2 Guidance, Legislation and Background Information

Section 6.6 of Planning Policy Wales (PPW) addresses flood risk and drainage issues. PPW advises that TAN15: Development and Flood Risk should be referred to for further policy advice on development and flood risk. Paragraph 6.6.7 of PPW advises that surface water management proposals must be approved by the SuDS Approval Body (SAB), in this case Cardiff City Council.

As discussed above, the site is located in Flood Zone C2 which TAN15 advises '*only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences*.' The proposed development would be considered a '*less vulnerable*' use and therefore would be considered acceptable subject to the application of the justification test.

The SAB will require evidence that the proposed development will not increase the risk of flooding elsewhere and/or lead to a deterioration in the quality of the runoff.

6.4.3 Establishing the Baseline

The baseline will be established from:

- A site walkover survey to assess if there are any physical features that would have an impact on the flood risk to the site, to review the existing drainage regime and to identify potential receptors;

2
https://maps.cyfoethnaturiolcymru.gov.uk/Html5Viewer/Index.html?configBase=https://maps.cyfoethnaturiolcymru.gov.uk/Geocortex/Essentials/REST/sites/Flood_Risk/viewers/Flood_Risk/virtualdirectory/Resources/Config/Default&layerTheme=2

- Consultation with Natural Resources Wales to confirm the flood risk to the site;
- Consultation with Welsh Water to establish if there are any surface water sewers to which the site could be drained;
- Details of the drainage system serving the existing areas of hardstanding obtained from the site owner;
- A topographic survey to establish existing ground levels and to assist in identifying the existing drainage regime; and
- A site investigation to establish if soakaways and the like are a tenable means of disposing of surface water drainage.

6.4.4 Study Area & Sensitive Receptors

Likely significant impacts to sensitive off-site receptors will be determined by the proposed drainage solution and the flood risk to the site.

On site receptors are likely to be primarily operatives of the Asphalt Plant and screening operation if the site is shown to be at significant risk of flooding.

6.4.5 Potential Effects

Without mitigation, new development can increase the risk of flooding elsewhere if the existing areas of drained hardstanding are significantly increased. Development can also result in a deterioration in the quality of surface water runoff that can have adverse effect on sensitive receptors.

Development in areas at risk of flooding can also increase the flood risk elsewhere due to the obstruction of flood flows and/or the reduction in areas available to store floodwater in times of flood.

Construction Phase

During the construction phase, the effects are primarily associated with the quality and quantity of surface water runoff. This includes surface water runoff potentially laden with silt and contaminated with hydrocarbons (diesel fuel) from poorly maintained construction plant and/or the inappropriate storage of fuels.

The formation of new impermeable surfaces or prior to the commissioning of any sustainable drainage measures required may increase the flood risk elsewhere.

Operational Phase

If there is a significant flood risk to the site, during the operational phase the principle risk would be to the safety of the operatives should the site be inundated. The proposed plant and associated infrastructure may also obstruct flood flows, or reduce the area available to store floodwaters in times of flood, leading to an increased flood risk elsewhere.

The formation of additional areas of drained hard standing may increase surface water runoff and hence the risk of flooding elsewhere.

Runoff from the proposed development may have an adverse impact on sensitive receptors if water quality is reduced by the proposed uses contemplated by the development.

6.4.6 Assessment Methodology

Set out below is the proposed assessment methodology for the construction and operational phases of the development.

Construction Phase

Details of the proposed construction sequence and construction methods will be considered in the context of the existing drainage regime to establish if these could result in the potential adverse impacts identified above.

Operational Phase

The proposed development plans will be reviewed against the baseline to establish if there are likely to be any potential adverse impacts during the operational phase.

In terms of the flood risk to the site, this would include the safety of operatives and an increase in the flood risk elsewhere arising from the obstruction to flood flows and/or a reduction in the areas available to store floodwaters in times of flood.

If significant additional area of positively drained hardstanding are to be created, the additional runoff that would be generated compared to the baseline conditions will be evaluated. The likely impact of the proposed operation on the quality of the runoff will also be established.

6.4.7 Indicative Mitigation Measures

If the site is shown to be at significant risk of flooding, the Asphalt Plant where possible would have to be elevated above the estimated flood levels and/or compensatory floor storage volume provided. It is noted, however, that the preliminary plant design indicates that much of the Plant (with the exception of the Bitumen Tanks) is supported above ground.

All electrical equipment, or equipment that may be vulnerable to the effects flooding, should be raised above the estimated 0.5% AEP flood level allowing for the impact of climate change.

The Control Cabin should be set such the floor level is a minimum of 300mm above the estimated 0.5% AEP flood levels allowing for the impact of climate change.

The areas of hardstanding should be drained using sustainable drainage measures to attenuate surface water runoff to that of the existing site and to ensure there is no deterioration in the quality of the surface water runoff,

6.4.8 Summary

The site is shown to be in an area that has flooded historically and therefore the flood risk to site will be established with reference to the data held by NRW. Measures will be put in place to mitigate any significant flood risk to the development to ensure operatives will be safe and the proposed plant will not increase the flood risk elsewhere.

The proposed development may increase the surface water runoff from the site and reduce the quality of the runoff. Sustainable drainage measures will be employed to ensure that there would be no adverse impacts on potentially sensitive receptors arising from an increase in runoff and/or a deterioration in water quality.

6.5 Ecology

6.5.1 Introduction

This scope has been derived using the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines, consultation with Natural Resources Wales (NRW)³ guidelines, and national and local planning policies. It is also informed by the initial findings of a baseline ecological appraisal survey of the site conducted on 20th March 2019 by SLR, and a desk top study.

6.5.2 Guidance, Legislation and Background Information

The letter from NRW highlights the fact that the application site lies approximately 200m from the Severn Estuary, which is designated as a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar Site and Site of Special Scientific Interest (SSSI), and that the applicant must consider the potential impacts of the proposed development on these sites of importance for wildlife, including the potential for cumulative indirect impacts.

NRW's response letter also recommends that ecological appraisal of the site is conducted to determine the ecological importance of the proposed development site itself, including the detection of any legally protected or otherwise notable species that may be present.

The following section presents a list the wildlife legislation pertinent to the application:

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb⁴ wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

The Habitats Regulations also direct appropriate authorities to designate sites of community importance in England and Wales for the protection of natural habitat types listed in Annex I, and species listed in Annex II of the Habitats Directive. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).

³ Letter of 20th February 2019 from Sarah Lund (NRW Development Planning Team), reference CAS-78128-Z5Q8

⁴ Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

Directive 2009/147/EC on the Conservation of Wild Birds

The European Union meets its obligations for bird species under the Bern Convention and Bonn Convention and more generally by means of Directive 2009/147/EC (Birds Directive) on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended). The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe.

Special Protection Areas (SPAs) are strictly protected sites classified in accordance with Article 4 of the EC Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species. The European Commission's website hosts a full copy of the Directive 2009/147/EC on the conservation of wild birds (Birds Directive) (the codified version of Council Directive 79/409/EEC as amended), within which all the Articles and Annexes (including amendments) are given, along with useful interpretation information.

Ramsar Sites

Ramsar sites are wetlands of international importance designated under the Ramsar Convention. Sites proposed for selection are advised by the UK statutory nature conservation agencies, or the relevant administration in the case of Overseas Territories and Crown Dependencies, co-ordinated through JNCC. In selecting sites, the relevant authorities are guided by the criteria set out in the Convention.

Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CROW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

Natural Environment & Rural Communities (NERC) Act 2006

The NERC Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

Section 41 of the Act requires the publication of a list of habitats and species which are of principal

importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.

6.5.3 Establishing the Baseline

As described above in Section 6.5.1, an ecological appraisal survey of the site was conducted on 20th March 2019, and a data request submitted to the local biological records centre. The data from these are currently being processed into a report, but initial indications are that the construction footprint itself has no significant ecological or nature conservation interest. The proposed construction footprint is dominated by anthropogenic and disturbed habitats associated with the actively used materials recycling facility. No evidence of the presence or potential presence of legally protected or otherwise notable species has been identified within the application site to this juncture.

6.5.4 Study Area & Sensitive Receptors

The data search requested all information pertaining to statutory and non-statutory designated wildlife sites, and all notable species within 1km of the application site. This distance was selected as being appropriate due to the known presence of the statutorily designated wildlife sites associated with the Severn Estuary 230m to the south and east, and the barrier formed by the intensive industrial and urban landscapes immediately to the north and west. It is considered that all sensitive ecological receptors within the potential zone of influence of the proposed development at potential risk of indirect impacts (noise, air quality impacts etc.) will have been identified.

The ecological appraisal survey of the proposed development site included all land within the red line boundaries shown in Figure 2 Section 3.1, plus a minimum of 50m around these, where this was accessible. It was considered that in the context of the proposed development and the surrounding landscape, this should be sufficient to identify any ecological receptors that may be sensitive to direct or indirect impacts arising from the construction process.

Between the desk top study and the ecological appraisal survey it is considered that all sensitive ecological receptors that may be at risk of direct or indirect impacts from the proposed development will be identified.

6.5.5 Potential Effects

This section identifies the potential direct and indirect impacts during the construction and operational phases of the proposed development.

Construction Phase

Based on the activities associated with the construction phase, the sources of potential impacts arising from the construction phase of the development, in the absence of specific mitigation measures, are outlined in Table 2, below.

Table 2: Potential Impact Sources During the Construction Phase

Impact Source	Nature of Impact	Comment
Habitat loss through land take	Habitat loss involves the direct destruction or physical take-up of vegetation, or the removal	Initial appraisal of the site construction footprint indicates that it is predominantly bare

Impact Source	Nature of Impact	Comment
	<p>of other structures with conservation interest. Habitat loss may also occur indirectly as a result of a change in land-use or water management, for instance the drying-up of ponds or through induced successional events leading to a change in habitat type.</p>	<p>ground and disturbed habitats associated with the actively used materials recycling facility. These are considered to be of no significant ecological or nature conservation importance.</p> <p>The statutorily designated sites associated with the Severn Estuary 230m to the south will not be directly affected and will not experience habitat loss or land take.</p>
<p>Habitat fragmentation</p>	<p>Habitat fragmentation is concerned with spatial processes, such as negative edge effects (<i>e.g.</i> colonisation by ‘aggressive’ species or successional changes) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.</p> <p>Fragmented habitats are likely to be more vulnerable to external factors that may have a negative effect upon them: <i>e.g.</i> disturbance, and may be less resilient to change, including climate and management changes; than connected habitats because colonising species may be unable to reach the habitat to re-colonise in the event of species loss.</p>	<p>The proposed development footprint is located within a larger site that is an actively used materials recycling facility. No areas of significant habitat are to be lost and no green infrastructure corridors will be interrupted.</p> <p>The proposed development is considered to have a negligible risk of causing significant habitat fragmentation.</p>
<p>Disturbance from human activity, noise and vibration</p>	<p>Short-term increases in disturbance levels as a direct result of human activity (<i>i.e.</i> visual disturbance) and through increase generation of noise as well as vibration during the construction phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.</p>	<p>The Severn Estuary and associated wildlife sites are located approximately 230m to the south. Whilst it is considered unlikely that construction activity will cause significant disturbance, this will be appraised by a qualified acoustician.</p>
<p>Dust</p>	<p>Dust generated during construction works can have adverse effects upon vegetation restricting photosynthesis, respiration and transpiration. Furthermore it can lead to phytotoxic gaseous pollutants penetrating plants. The overall effect can be a decline in plant productivity, which may then have indirect effects on the quality of the affected habitats and associated fauna.</p>	<p>The Severn Estuary and associated wildlife sites are located approximately 230m to the south. Whilst it is considered unlikely that construction will cause significant damage through dust or other airborne pollutants, this will be appraised by a qualified air quality assessor.</p>
<p>Alterations to surface and groundwater water regime</p>	<p>Groundwater and surface water is often important in supporting wetland ecosystems for example fens or maintaining river base flows. Any significant alterations to the groundwater regime therefore has the potential to affect</p>	<p>The Severn Estuary and associated wildlife sites are located approximately 230m to the south. Whilst it is considered unlikely that construction will cause significant damage through surface water pollution, this will be appraised by</p>

Impact Source	Nature of Impact	Comment
	both locally and on a much wider scale a wide range of wetland habitats and the species which rely upon these habitat types. In particular, pollution events that enter water courses or groundwater base flows can have negative impacts a considerable distance away from the construction site.	qualified hydrologists and land quality assessors, particularly in light of the area's history of use for waste disposal.

Operational Phase

Based on the development proposals, the sources of potential impacts arising during the operational phase of the development that could have a negative effect on the ecological and nature conservation resource in the vicinity of the scheme, in the absence of specific mitigation measures, are outlined in Table 3.

Table 3: Potential Impact Sources during the Operational Phase

Impact Source	Nature of Impact	Comment
Changes in Air Quality	Increased emissions of nitrogen and sulphur oxides or other chemicals from the flue stack may potentially result in acidification and eutrophication upon sensitive ecosystems at considerable distances from the proposed development site.	The potential impacts of changes in air quality will be subject to an air quality assessment to determine whether any impacts on the Severn Estuary designated sites and associated receptors are anticipated.
Disturbance from human activity and noise.	Long-term increases in disturbance levels as a direct result of human activity (e.g. visual disturbance) and through increased generation of noise can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.	The potential impacts of noise and human activity will be subject to acoustic assessment to determine whether any impacts on the Severn Estuary designated sites and associated receptors are anticipated.
Alterations to surface water flow and quality	Pollution incidents entering the surface water drainage system (e.g. spilt oil or fuel washed from hard-standing) can enter surface water courses and potentially negatively impact sites a considerable distance from the proposed development.	The potential impacts of surface water flows and land contamination issues will be subject to specialist hydrological and land quality appraisal to determine whether any impacts on the Severn Estuary designated sites and associated receptors are anticipated.

6.5.6 Assessment Methodology

On 20th March 2019, an Extended Phase 1 Habitat Survey was conducted of the survey area identified above. The survey predominantly followed the standard Phase 1 Habitat Survey method⁵, but this was modified to

⁵ Nature Conservancy Council (1990). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*, 2010 reprint. JNCC, Peterborough.

account for the comparatively small size and anthropogenic nature of the application site, and the method was also extended to include the recording of additional information, including:

- field evidence indicating the potential presence of statutorily protected species or other species of conservation significance;
- habitat appraisal to identify habitats capable of supporting statutorily protected species or other species of conservation significance;
- field evidence of the presence of derogated plant species; and
- identification of any other features of note that may require mitigation or an ecologically sensitive design in respect of the development.

Whilst not a full botanical or protected species survey, the Extended Phase 1 Habitat Survey enables experienced ecologists to obtain an understanding of the ecology of a site such that it is possible to:

- confirm the nature conservation significance of a site and assess whether the potential for impacts on habitats/species is likely to represent a material consideration in planning terms; or
- establish the scope and extent of any additional specialist ecological surveys that will be required before such a confirmation can be made.

The acoustic, hydrological, air quality and land quality assessments will all be conducted in accordance with the industry best practice standards for their respective disciplines. Further details on these can be found in the respective sections of this scoping statement. Should these technical studies identify potential indirect negative impacts on valued receptors, such as the Severn Estuary, then additional ecological appraisal of the identified receptors would be conducted as necessary.

If a risk of likely significant negative impacts to the designated SAC, SPA or Ramsar sites of the Severn Estuary is identified, then a formal Habitats Regulations Assessment would be undertaken in accordance with best practice.

6.5.7 Indicative Mitigation Measures

Initial appraisal indicates that there will be no direct impacts arising from the construction process as the construction footprint does not appear to support any significant ecological features. However, should this situation change then appropriate best practice mitigation would be implemented.

Should the acoustic, hydrological, land quality or air quality studies indicate any significant negative indirect impacts on sensitive receptors such as the Severn Estuary, then appropriate mitigation would be implemented guided by the best practice of the respective discipline.

All mitigation will be employed following the mitigation hierarchy:

- **Avoid** – in the first instance amendments would be made to the development proposals to avoid or remove the source of impact. For example, repositioning the plant, choosing a different specification of material, or conducting works at a time of year that would avoid causing disturbance to an ecological receptor such as nesting birds;

- **Mitigate** – where it was impossible to avoid an impact, steps would be taken to reduce the magnitude of the impact, ideally to zero. For example, the creation of screening bunds or planting, or the translocation of protected species; and
- **Compensate** – as a final resort, where impacts cannot be avoided or mitigated for, then on or off-site compensation would be implemented.

6.5.8 Summary

Initial ecological appraisal of the development proposals is under way, and at this juncture it is considered highly unlikely that the construction of the proposed asphalt plant will have any direct negative impacts on features of nature conservation importance. The construction footprint is located within an actively used materials recycling facility with very limited semi-natural habitat being recorded.

However, the Severn Estuary is located approximately 230m to the south. The estuary supports several designations for wildlife value, including SAC, SPA, Ramsar and SSSI, being primarily designated for supporting notable bird populations, but also marine habitats. The proposed development could potentially have significant indirect negative impacts on these sites, and this will be investigated through a range of technical studies, including hydrology, air quality, noise and land quality.

Should potential negative impacts be identified, then further study would be conducted of the qualifying features of the designated sites, and mitigation strategies developed in accordance with best practice principles.

6.6 Transport

6.6.1 Introduction

The focus of the transport assessment will be to identify those impacts likely to be generated by the proposed asphalt plant. The main impacts of the development would arise in the construction phase and to a greater extent during the operational phase. As such the assessment work will predominantly focus on the assessment of transport impacts on the road network during the operation of the site.

The aim will be to review the current situation along the route to site and on the local highway network and predict the likely areas where issues may arise, finally presenting feasible options to mitigate any impacts. The review will also include consideration of the proposed site access to determine its suitability.

6.6.2 Guidance, Legislation and Background Information

The proposed development is located approximately 2 miles east of Cardiff City centre, south of the Tremorfa district directly southeast of Rover Way. The site is located within the north-eastern confines of the southern Celsa Steel UK site, with existing operations currently utilising the Tide Fields Road access.

An assessment of the impacts associated with the proposed asphalt plant will be undertaken, to include a review of any impacts to the road network and an assessment of the impact in terms of environmental effects. The transport assessment will be presented as part of the Environmental Statement.

The Environmental Statement Transport chapter will assess the transport aspects of the proposal at this site, in accordance with the Guidelines for the Environmental Assessment of Road Traffic (IEMA, 1993), herein

referred to as the IEMA Guidelines. In addition, the access, traffic and transport assessment will be carried out in accordance with the following policy and guidance documents:

- Institution of Highways and Transportation (IHT) publication “Guidelines for Traffic Impact Assessment”;
- Guidelines for the Environmental Assessment of Road Traffic (1993) from the Institute of Environmental Management and Assessment (IEMA); and
- Department for transport “Design Manual for Roads and Bridges (DMRB)”.

6.6.3 Establishing the Baseline

Traffic survey data will be obtained so that the existing traffic flows and vehicles types can be understood. A traffic count survey will be undertaken at the roundabout junction of Tide Fields Road with Rover Way. This will collect turning flow data for each arm of the roundabout for a period of 13 hours on a weekday, with vehicle classification recorded.

6.6.4 Study Area & Sensitive Receptors

The existing site access is from Tide Fields Road by way of a purpose-built priority junction, a short distance to the south of the roundabout junction of Tide Fields Road with Rover Way. It is anticipated that the majority of vehicles will travel to and from the Site via the strategic road network from the M4. This would include Rover Way northwards to link to the A4232 and thereafter, by way of the A48, to the M4 via junction 29A and 29. It is anticipated that this route will be used for the import of some materials to site and for the export of asphalt from site.

Photo 6-1 View of Existing Access



As such the route to form the study area will include Rover Way to the roundabout junction with the A4232, to include the signalised junction close to the Tesco supermarket. The route predominantly serves industrial land uses and so there are not expected to be many sensitive receptors along the route.

6.6.5 Potential Effects

The potential sources of impact have been divided into two development phases: construction and operation. The impacts associated with each of these phases are discussed in further detail below. In summary the main potential sources of impact are likely to relate to the impact of construction traffic on the highway network, in the form of heavy goods vehicles (HGVs) and lighter vehicles associated with deliveries and construction workers.

The impacts from traffic generated during operation are likely to be greater as the numbers of vehicles will be larger. Impacts to the operation of the highway network will be determined to include any reduction to link capacity and predicted reduction to junction capacity; changes to road safety will also be identified.

The Transport Chapter assessment will also include consideration of the effects of additional traffic in relation to:

- Driver severance and delay;
- Community severance and delay;
- Road safety and the impact on vulnerable road users;
- Noise; and
- Dust and dirt.

Operational Phase

During operations the proposed asphalt plant is expected to generate vehicle trips through the transport of materials to the site, including any slag stored off-site, and through the export of the final asphalt product. Access into the site will be strictly controlled to operational personnel and there will be no parking provided on site for staff. Operational staff would be encouraged to travel via public transport or, if driving, park in the Celsa Steel Works car park to the north of Rover Way, accessible via Seawall Road.

Delivery vehicles and mixer trucks will access the site via the internal haul roads within the Celsa Steel Works site, gaining access to and from the highway via the Tide Fields Road access; no vehicular access will be available via the access onto Rover Way.

Whilst aggregate and bitumen will need to be imported to site, it is proposed that waste finings (crushed slag) from the Celsa Steel Works would be utilised in the Asphalt Batching Plant process. This ensures that the waste materials located within the wider Celsa Steel Works site have a functional re-use and also reduces the level of highway movements needed to serve the Asphalt Plant.

6.6.6 Assessment Methodology

The EIA Chapter will include a detailed assessment of the current conditions and will focus on the potential effects during the operational phase on the surrounding sensitive receptors. This will include an assessment of

the type of vehicles used and the number of trips anticipated to be generated by HGVs, LGVs and other vehicles. Mitigation measures to deal with any traffic issues will be identified, with the aim to reduce the significance of the environmental impacts.

An initial desk top review of the site and the proposals has been completed. From this the following data collection and analysis will be undertaken:

- Undertake a site visit to establish a full understanding of the highway network within the study area and identify potential sensitive receptors;
- Determine the current position, in traffic generation and distribution terms, of the disposal of the slag to be used for asphalt production and identify the route from transport of the material back to site;
- Forecast the traffic generation and distribution associated with the importation of raw materials, other than slag, required for asphalt production;
- Forecast the traffic generation and distribution associated with the exportation of finished asphalt production output;
- Forecast the traffic generation and distribution associated with the workforce at the plant;
- Predict the resulting impact in terms of traffic flows, capacity and delay on the principal junction and links between the site and the A48 and M4 as appropriate, the study area of which will be determined through the scoping process; and
- Consideration of construction phase traffic impacts and environmental effects.

The results of the environmental impact assessment will be presented in a transport chapter for inclusion within the ES. A review of site layout, access provision, internal circulation and suitable hardstanding to accommodate the operational needs of the plant will also be included.

6.6.7 Indicative Mitigation Measures

Mitigation measures will be proposed following the completion of the impact assessments, as informed by the baseline. The purpose of these measures is to aim to remove, minimise or compensate any significant effects. Mitigation potentially required for the significant effects resulting from the development would include Traffic Management Plan (TMP) to be prepared for the movement of vehicles during the operation of the asphalt site.

6.6.8 Summary

The focus of the transport assessment will be to identify those impacts likely to be generated by the proposed asphalt plant. The main impacts of the development would arise in the construction phase and to a greater extent during the operational phase. As such the assessment work will predominantly focus on the assessment of transport impacts on the road network during the operation of the site.

The aim will be to review the current situation along the route to site and on the local highway network and predict the likely areas where issues may arise, finally presenting feasible options to mitigate any impacts. The review will also include consideration of the proposed site access to determine its suitability.

7.0 Environmental Issues to be ‘Scoped Out’

7.1 Landscape and Visual

7.1.1 Introduction

A Landscape and Visual Appraisal has been prepared to provide a high-level review of potential landscape and visual effects arising from the development of a proposed new Asphalt Plant at Celsa Steel UK, Cardiff. The site is located adjacent to existing industrial areas of Allied Industrial Park and Tremorfa Industrial Estate. The proposals include a 320 TPH Fixed Asphalt Plant occupying an area of approximately 10,022m² to the east of Rover Way, Tremorfa.

Fieldwork was carried out in March 2019 which assisted the review of local landscape receptors and provided an understanding of the landscape character in the study area. The landscape and visual appraisal identified six viewpoints within the surrounding study area within 1km of the site. The photograph locations identified are considered to represent the likely extent of visibility and local receptors.

7.1.2 Guidance, Legislation and Background Information

The site lies within the boundary of Cardiff Council. The local policy context is set out in the Cardiff Local Development Plan 2006-2026 and on the accompanying Proposals Plan and Constraints Plan⁶. Policies relevant to the landscape and visual appraisal are discussed below:

The Proposals Plan identifies the site area within Employment Area EC1.3 which relates to *Rover Way (Celsa Steel Works, Tremorfa Industrial Estate, Seawall Road)* which has Primary Uses in classes B2 (General Industrial) and B8 (Storage or Distribution). The site is therefore located within an area of planned economic growth and strategic development.

The site is located within National Landscape Character Area (NLCA) 35: ‘*Cardiff and Newport*’ which has been identified by Natural Resources Wales⁷ and the summary description is provided below:

‘Two cities and associated suburbs and satellite towns dominate this part of south-east Wales. They include Wales’ capital and largest settlement, Cardiff, as well as Newport, Cwmbran, Pontypool, Penarth and Barry. The area forms a busy transport and development corridor. It occupies the coastal lowlands between the Severn estuary with its levels, and the edge of the South Wales Valleys with their uplands. The area includes major ports at Cardiff, Barry and Newport, and associated industrial infrastructure. There are also extensive residential, suburban areas and major retail, business and recreational facilities. There is an intensive network of busy roads and railways, including part of the M4 corridor’.

Local information regarding landscape character is provided by the Cardiff Landscape Character Assessment (February 2008)⁸. Review of this document confirms that the site is not located within an identified Landscape

⁶Cardiff Adopted Local Development Plan (LDP) 2006-2026 and supporting documents. Available online at: <https://www.cardiff.gov.uk/ENG/resident/Planning/Local-Development-Plan/Pages/default.aspx>

⁷ Available online at: <https://naturalresourceswales.gov.uk/evidence-and-data/maps/nlca/?lang=en>

⁸ Cardiff Council – A Review of Landscape Character Areas, TACP, February 2008

Character Area due to its urban location.

The site does not lie within any local or national designations that concern the protection and conservation of landscape character. The Proposals Plan does however identify a local landscape designation (Special Landscape Area - Wentloog Levels) approximately 2km to the north of the site at Newton and the adjacent coastline, extending up to 1km out to sea. Fieldwork confirmed that there would be no views of the application site from this part of the coastline.

7.1.3 Assessment Methodology

GLVIA3⁹ is the main source of guidance on the principles and processes of LVIA and recognises that, having signed and ratified the European Landscape Convention, the United Kingdom government has obligations to deal with such matters. The guidance also takes into account the formal requirement for Environmental Impact Assessment in response to European Union Directives. The Landscape and Visual Appraisal has therefore been carried out in accordance with the provisions of GLVIA3.

GLVIA3 sets out a framework for making judgements about the level of effects that may result from change or development. It describes a step by step approach in which: judgements about the value and susceptibility of the receptor are combined into a judgement about sensitivity; judgements about the size/scale of the effect, its geographical extent and its duration and reversibility are combined into a judgement about the magnitude of the effect; and finally, the judgements about sensitivity of the receptor and the magnitude of the effect are combined to judge the level of the effect. If the assessment forms part of an EIA, a threshold may then be identified to show which effects are considered to be significant and which are not. In non-EIA appraisals this step is not required though levels of effect may be described in terms of their relative importance.

Due to the nature of the proposed development and existing landscape context, the landscape and visual appraisal has followed the non-EIA approach and has provided a high-level review of potential landscape and visual effects and to assess their relative importance.

7.1.4 Summary

Key findings of the landscape and visual appraisal are:

- The proposed development would be in accordance with local planning policy as the proposed end use would be in keeping with the Employment Area status of the Site. The proposed development would be similar in scale and appearance to other industrial buildings / structures nearby.
- The proposal is not considered to have the potential to detract from the wildlife or recreation value of the Pengham Green open space and SINC. This area is currently set within an industrial landscape context.
- The development proposal would not result in the loss of any valued landscape features and it would not affect any landscape designations. It is also not considered to be harmful to local

⁹ Landscape Institute and Institute of Environmental Management and Assessment 'Guidelines for Landscape and Visual Impact Assessment' (Third Edition, April 2013)

landscape character and it would be in keeping within the findings of the Cardiff Landscape Character Assessment that identifies the site as being within an urban area.

- Visually, the proposed development would be well contained within the local landscape by existing buildings and well-established vegetation. It may be possible to gain views of upper parts of the proposed structures from some locations however these are only likely to form small parts of overall views within an already industrialised area. No views are anticipated to have a full view of the proposed development due to screening features in the surrounding landscape

The Landscape and Visual Appraisal has confirmed that due to the urban and industrial character of the existing landscape and the and high level of screening from potentially sensitive receptors there would be no significant landscape or visual effects likely to arise from the proposed development. This landscape and visual appraisal is therefore considered to be in proportion to the potential levels of effect and as such a detailed LVIA is not required.

7.2 Heritage and Archaeology

7.2.1 Introduction

This section presents the proposed scope of work for the Cultural Heritage Assessment for the proposed Asphalt Batching Plant development within the Celsa Steel Works site, east of Cardiff Docks.

The purpose of the assessment will be to identify the potential effects of the proposed development on the historic environment and cultural significance of the area in which the development is located. A detailed assessment of the results of this scope will be assessed within a Heritage Statement and will follow policy and best practice guidance in order to establish a robust and transparent analysis of the issues.

The approach adopted will follow a standard staged-process consisting of baseline survey to identify known and potential historic assets, design iteration to avoid constraints and minimise potential impacts on the historic environment, comparative analysis to determine which historic assets might be affected by the proposed development, field survey and analysis to establish the heritage significance of important affected assets, characterising the nature and magnitude of impacts, design of mitigation measures, and an assessment of the residual effect on the historic environment.

7.2.2 Guidance, Legislation and Background Information

The assessment will comply with Welsh legislative and planning policy frameworks, and apply Cadw's relevant guidance, to ensure the EIA is undertaken in a robust manner. The following guidance, legislation and background information of is of relevance:

- The Historic Environment (Wales) Act 2016 is the primary statutory tool for protecting historic assets and sustainable management of the historic environment. It is designed to enable greater transparency into decisions taken on the historic environment and to make it a statutory requirement for information on the historic environment to be safe-guarded for the public good.
- National policy within Wales is set out in by Planning Policy Wales Edition 9, November 2016 ("PPW"), in which Chapter 6 *Conserving the Historic Environment* explains the need for a reasonable and proportionate impact assessment to ensure proposed development is sustainable and to prevent unnecessary harm to historic assets.

- PPW is supported by *Technical Advice Note 24: The Historic Environment* (May 2017) which is designed to assist local authorities with developing their local plans and for determination of planning applications or listed building consent in relation to historic assets. The Welsh Ministers and Planning Inspectors will consider these guidance documents when considering a proposal such as this.
- The two principal guidance documents that will be followed in this assessment are those produced by Cadw on behalf of the Welsh Government for managing historic assets: *Heritage Impact Assessment in Wales* (May 2017) and the *Setting of Historic Assets in Wales* (2017).
- Cadw's *Conservation Principles for the sustainable management of the historic environment in Wales* (March 2011) would also be used to establish objective assessment of the value and significance of historic assets within and surrounding the proposed development site.
- In relation to the Registered Landscape of Special Archaeological Interest in Wales, Natural Resources Wales (NRW)'s *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in the Planning and Development Process* will be considered.
- The Chartered Institute for Archaeologists' standard and guidance for Historic Environment Desk-Based Assessment (January 2017) provides national quality standard for the baseline study.

7.2.3 Assessment Methodology

Establishing the Baseline

No Designated Historic Assets (DHAs) of national importance lie within the proposed development area (Site boundary). Based on information supplied by Glamorgan-Gwent Archaeological Trust's Historic Environment Record (HER) there are eight listed buildings (LB)s, one scheduled monument (SAM) and the western boundary of the Gwent Levels Historic Landscape (alluvial wetlands) located within 2km of the Site. The eight Listed Buildings, all designated Grade II, are within the south-eastern side of Cardiff, immediately north of the Docklands Area.

The Site, located south of Rover Way is on reclaimed land. Based on historic mapping the land on which the Site is located was formally marine mudflats (known as the Cardiff Flats). 19th century mapping clearly shows the SSW-NNE marshland coastline and the centre of the Site located 200m offshore within the mudflats. Mid- to late-20th century mapping shows the area reclaimed, part of which was used to construct Cardiff Airport (during the late 1930s)¹⁰ and, later the Rover Works over the airfield during the late 1950s. Between 1957 and 1967, historic map evidence shows evidence of land reclamation and the construction of 'slag heaps' over the site. By 1967, the East Moors Steelworks had been erected and a mineral railway and production sheds fed by a conveyor [belt] occupied the centre of the Site. Throughout the history of the steelworks, the centre of the site was never fully developed, although a thick concrete mat with a substantial [historic] sub-base covered the site. The East Moors Steelworks eventually ceased production in 1978. Steel production continued on the site with Allied Steel and Wire, however, this company went into receivership in 2002. The Site was bought by the Spanish firm Celsa in 2003 but continued steel production until 2007.

¹⁰ Alas known as Pengam Airport, the airfield was also used in World War II but was closed in 1954. A number of hangars from this period still stand and would be regarded as NDHAs

Based on the historic mapping and online sources, there are potentially a small number of non-designated historic assets of local importance present within a 2 km buffer from the Site boundary (such as the aircraft hangars). To the east of the 2km buffer zone, and slightly encroaching it, is the designated Historic Landscape of the Gwent Levels¹¹, whilst to the west of the Site is the 19th and 20th century docklands and townscape of Cardiff.

Study Area & Sensitive Receptors

It is proposed that the cultural heritage assessment will employ two study areas. The Inner Study Area will comprise the proposed development and the area up to 1 km from the centre of the Site (centred on NGR 321589.013 / 176383.759). The assessment of this area will include the south-eastern city boundary of Cardiff and the industrial development to the north of the Site. The 1km buffer zone will identify the significance of known assets, and the potential for currently unknown assets to occur, in particular, within the boundary of the proposed development.

An analysis of indirect effects will be carried out on all DHAs within the Inner Study Area and within a second study area that forms a 2km buffer zone from the centre of the Site. All DHAs within the buffer zone will be also identified. Based on GGAT's HER all DHAs and the western extent of a designated Historic Landscape is incorporated between 1 and 2km from the centre of the Site.

Baseline Field Study

Following the preliminary process, a site inspection will be carried out over the area of the proposed development to establish the condition of historic assets and identify the potential for the existence of additional assets not currently identified. It will also identify the contemporary existing environment (including historic and modern developments and land-use including already constructed wind farms) to help understand the setting of DHAs and the degree of change that the proposed development might introduce. This scoping report identifies two buffer zones: 0 to 1km and 1km to 2km.

To assist with a future impact assessment a staged approach will be undertaken. Field inspections will be made after a filtering exercise to identify those DHAs that would not experience visual change and can be scoped out. This would be achieved by comparison of mapped DHAs to the Zone of Theoretical Visibility (ZTV) data and aerial imagery. For those DHAs which show a potential change to their setting from the proposed development being visible, further analysis would be undertaken to assess the level of [indirect] impact. ZTV mapping uses a bare earth model and even when it suggests potential visibility of the proposed turbines from DHAs, intervening vegetation and structures might screen views. It is envisaged that all designated assets; either individually or in associated groups, will be inspected where there is reason to predict significant intervisibility with the proposed development.

It is not proposed that all DHAs within the 2km buffer zone would need detailed assessment, but a representative selection of these might require computer modelling (wirelines and/or photomontages) to assist in compiling a robust evidence base for assessment. Some of these locations might coincide with the Landscape and Visual Impact Assessment viewpoints, but the following list provides those DHAs which on current information are likely to benefit from this approach due to proximity and within the ZTV for the

¹¹ The Gwent Levels Historic Landscape is of Outstanding Historic Interest in Wales, as cited in Part 2:1 of the Register of Landscapes, Parks and Gardens of Outstanding Historic Interest in Wales, 1998. The area (Ref number HLW(Gt)2) includes the Gwent Levels Sites of Special Scientific Interest (various) and Redwick Conservation Area.

proposed development being potentially visible from the following DHA sites/structures:

- Rumney Great Wharf (SM GM474)¹²
- Listed Building 13749 – The Maltings (industrial Building, constructed in 1887)
- Listed Building 13808 – The Church of St Saviour (dated 1887-8)
- Listed Building 14100 - Former St German's Church School (Adamstown)
- Listed Building 14129 – St Saviours Vicarage (incl. attached cottage to SE)
- Listed Building 18291 - Church of St Alban's On the Moors (constructed in 1911)
- Listed Building 18290 – Moorlands Hotel (constructed in 1896)
- Listed Building 87223 – World War I war memorial (erected 1919-1921)
- Listed Building 87483 – Royal Oak, Adamstown (late 19th century)

To also include any non-designated heritage assets that stand within the two buffer zones that are identified during a recommended walk-over survey.

Assessment Methodology

Potential effects on cultural heritage associated with the construction and/or operation of the proposed development may include:

- Direct effects through partial removal of the concrete pad during the groundworks phase – the depth of the anchor points may impact on known or currently undiscovered buried remains of archaeological interest; and
- Indirect effects may occur from the proposed development with the settings of designated historic assets including those resulting from intervisibility between an asset and the proposed development, in particular, Listed Buildings located to the west of the site, within the Cardiff parish of Splott and the designated Historic Landscape that stands to the east of the site.

Consultation with respect to the method of assessment employed and the cultural heritage assets will be undertaken with Cadw (SAMs, Grade I and II* LBs and Registered Parks and Gardens (also with NRW), and Cardiff City Council and Glamorgan-Gwent Archaeological Trust (for non-designated heritage assets).

7.2.4 Summary

Given the design of the proposed Asphalt Batching Plant, it is contended that Heritage and Archaeology could be scoped out of the ES. This assumption is based mainly on the distance between the DHAs and the proposed

¹² The physical extent of this SM site is unknown

development; all DHAs are within the 2km buffer zone and beyond and are probably not under threat from indirect impacts from the proposed development. However, a walkover survey will be required in order to identify any buildings or structures that contribute to the historic development of the area (including those that stand within the site boundary).

In terms of direct impacts, a watching brief and palaeoenvironmental sampling strategy would be required in those areas where anchor points will be located. It is known substantial peat deposits exist beneath the Site and the surrounding area. It is also known, based on the archaeological record elsewhere, that later prehistoric, Roman and medieval remains exist within and below certain peat layers.

7.3 Other Environmental Issues

A number of new environmental issues topic matters were recently introduced into EIA requirements through the EIA Regulations 2017. These 'Other Environmental Issues' include the potential assessment of:

- Infrastructure;
- Waste;
- Population and Human Health;
- Climate and Carbon Balance; and
- Risks of Major Accidents and/or Disasters.

None of these topics are considered likely to result in significant effects for a development of this nature at this location during either the construction or operational phases of the development. Therefore, it is proposed that these are 'scoped out' of the assessment.

Notwithstanding, the consideration of Population and Human Health is inherent within the assessment of effects associated with Transport, Air Quality and Noise. As such, whilst the ES is not going to contain a Population and Human Health specific chapter, this topic will have been considered throughout these ES Chapters and as part of the wider EIA. This approach is considered entirely proportionate to the Scoping of the EIA for this site and proposed quantum of development.

8.0 Closure

The above Scoping Request Report and the associated appendices are submitted pursuant to The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in request of a formal Scoping Opinion being adopted by Cardiff Council regarding the development proposals described herein.

As outlined above, the proposed development does not fall to be considered under either Schedule 1 or Schedule 2 of the regulations as 'EIA Development' on its own merits. However, subsequent to pre-application discussions with Cardiff Council, it is understood that the local planning authority is of the view that an EIA is required given that the application site sits within the wider Celsa Steel Site, the need to consider potential in-combination and cumulative effects, and given the site's proximity to a sensitive area (the Severn Estuary).

On this basis, and whilst no formal Scoping Opinion has been adopted by Cardiff Council, the applicant is undertaking a voluntary Environmental Impact Assessment in support of the application proposals.

This Scoping Request Report has therefore sought a proportional approach to the EIA, detailing what topics will be 'Scoped In' to the ES (Section 6) and those which are to be 'Scoped Out' of the ES given that they are not likely to raise significant effects (Section 7).

For those topics to be 'Scoped In' to the ES, Section 6 has sought to detail key legislative, guidance, planning policy or background information that has informed the methodology proposed. The report also details the baseline and methodology of the assessments considered necessary to assess the environmental impact of the proposed development.

In addition to the above, Section 5 of this report also details the 'Approach to the EIA', including overarching methodological approaches relating to the structure and format of the Environmental Statement, consideration of alternatives and the assessment of cumulative impacts.

Notwithstanding, it should be noted that other information pertinent to the planning application will be submitted outside of the remit of any Environmental Statement, such as the Planning Statement and Design and Access Statement.

It is therefore formally requested that Cardiff Council formally adopts a Scoping Opinion for the proposed development under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

If you wish to discuss matters contained in this report in greater detail prior to responding to the scoping exercise, please contact Edward Bright at:

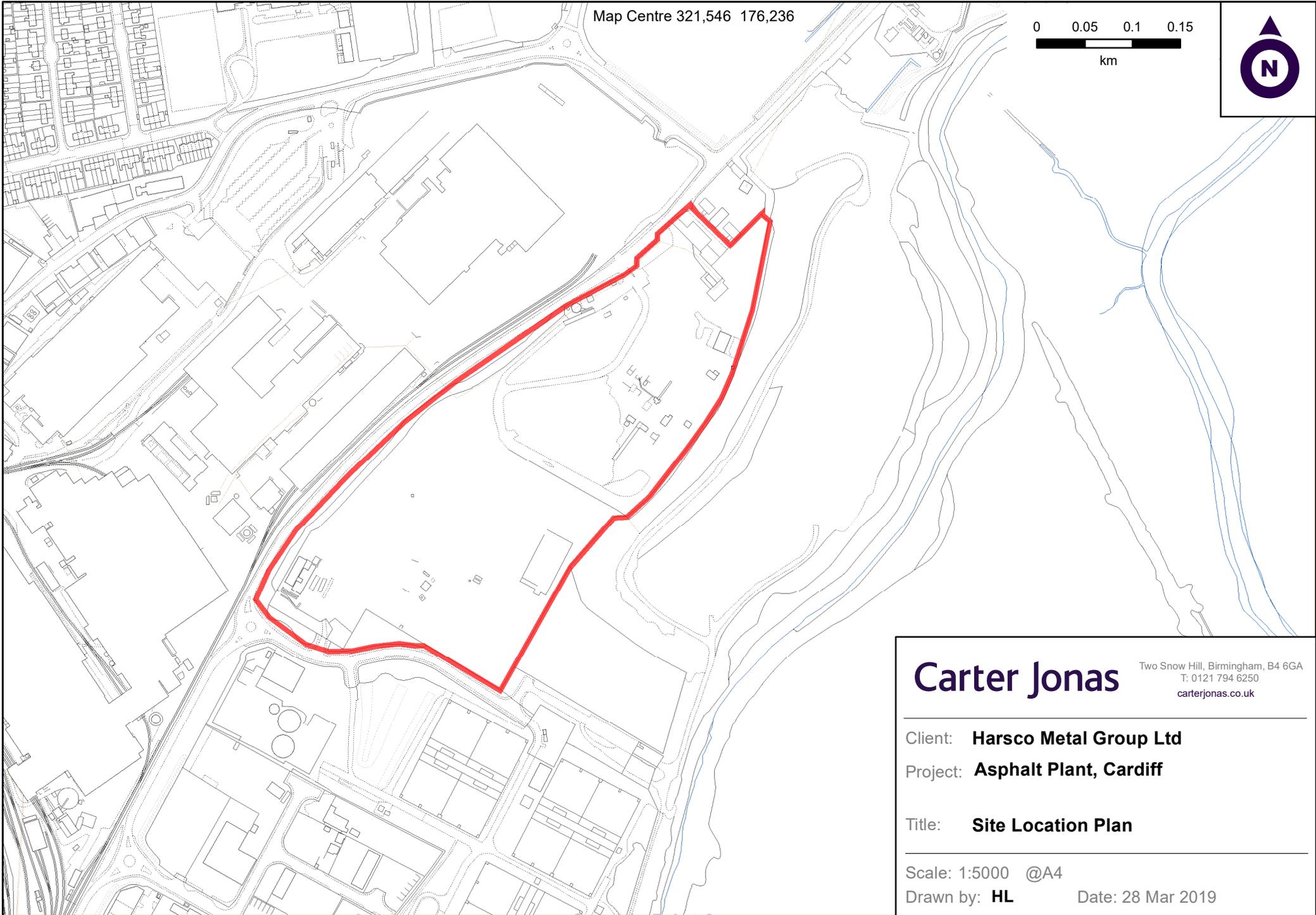
SLR Consulting Limited
3rd Floor
Brew House
Bristol
BS2 0EQ

Tel: 0117 906 4280

Email: ebright@slrconsulting.com

APPENDIX 1

Site Location Plan



Map Centre 321,546 176,236

0 0.05 0.1 0.15
km



Carter Jonas

Two Snow Hill, Birmingham, B4 6GA
T: 0121 794 6250
carterjonas.co.uk

Client: **Harsco Metal Group Ltd**

Project: **Asphalt Plant, Cardiff**

Title: **Site Location Plan**

Scale: 1:5000 @A4

Drawn by: **HL**

Date: 28 Mar 2019

APPENDIX 2

Proposed Site Layout

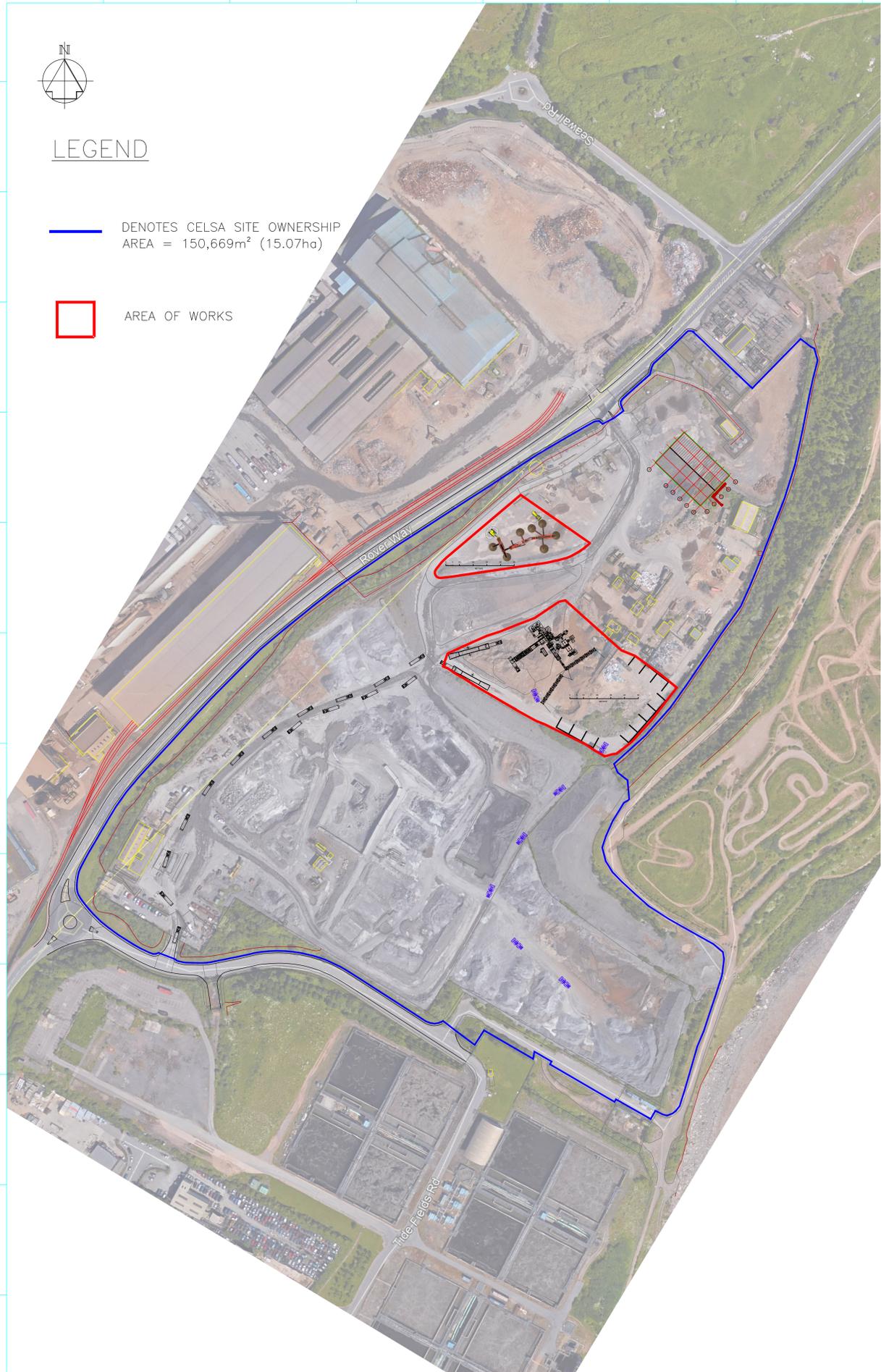
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1



LEGEND

 DENOTES CELSA SITE OWNERSHIP
AREA = 150,669m² (15.07ha)

 AREA OF WORKS



16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

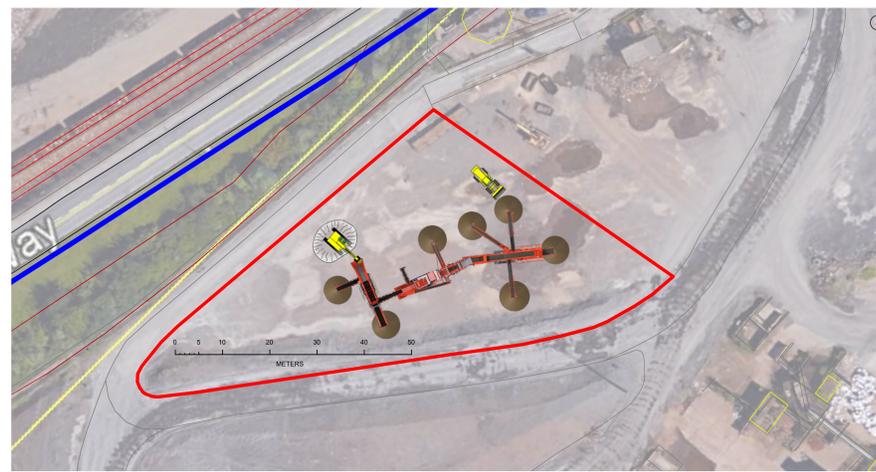
ASPHALT PLANT AREA
(CIRCA 10,022 M²)
SCALE 1:500 ON A1

NOTES

1. Do not scale from this drawing
2. Dimensions are for reference only
3. Plants' components and their locations are preliminary and may change during design stage
4. This drawing is prepared, in part, based on information provided by others. While this information is believed to be reliable, Harsco Metals assume no responsibility for inaccuracies, errors or omissions that might have been incorporated into this drawing as a result of incorrect information provided to us
5. This drawing is for planning purposes only. Not to be used for construction



INTERIM AGGREGATE PRODUCTION AREA
(CIRCA 3,380 M²)
SCALE 1:500 ON A1



0	RELEASED FOR DISCUSSION	26.09.2018	AI	
RevNo	Revision note	Date	Signature	Checked
OWNER:		HARSCO METALS & MINERALS ENGINEERING DEPT. HARSCO HOUSE, Bradmarsh Business Park, The Point, Bradmarsh Way Rotherham, S60 1BW, UK. TELEPHONE +44(0)1709 536850, FAX +44(0)1709 536805		
VENDOR/CONSULTANT:				
PROJECT: ASPHALT PRODUCTION AT CELSA CARDIFF				
PROJECT No.:	01994	TITLE:	NEW AGGREGATE AND ASPHALT PLANTS AT CELSA CARDIFF. LOCATION PLAN OPTION 7.5	
ENGR	AI	SIGN	DATE	SCALE
DRAWN	AI		25.09.18	1:1250
CHKD			26.09.18	
APPD				
DRG. NO.	01994-00-01-07.05			SIZE REV A0 0
RELEASED FOR <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> INFORMATION <input type="checkbox"/> APPROVAL <input type="checkbox"/> FABRICATION <input type="checkbox"/> CONSTRUCTION				

M L K J I H G F E D C B A

APPENDIX 3

'Parker Plant Limited, Starmix 4000 Technical Specifications'
document



STARMIX 4000

TECHNICAL SPECIFICATION

320 TPH FIXED ASPHALT PLANT

PLANT CAPACITY

320 TPH based on a temperature of 160 degrees C from mixer. Average moisture content of **3%**, including 3% filler and 5% bitumen in the mix. Mixer capacity of 4250 Kg per batch and a 45 second weigh/mix cycle.

260 TPH based on a temperature of 160 degrees C from mixer. Average moisture content of **5%**, including 3% filler and 5% bitumen in the mix. Mixer capacity of 4250 Kg per batch and a 45 second weigh/mix cycle.

210 TPH based on a temperature of 160 degrees C from mixer. Average moisture content of **7%**, including 3% filler and 5% bitumen in the mix. Mixer capacity of 4250 Kg per batch and a 45 second weigh/mix cycle.

Assuming the following conditions : -

- 1) 100% Plant utilisation
- 2) Ambient temperature 15⁰C
- 3) Altitude up to 150 metres above sea level
- 4) Average moisture content is for surface moisture only
- 5) Free-flowing filler, density 1120 Kg/ m³
- 6) Single sized aggregate (max. lump 40mm), density 1600 Kg/ m³
- 7) Mix recipe with no excessive proportion of one size
- 8) Feed to contain a maximum of 35% 0 – 3mm fines
- 9) Gas oil calorific value 42,700kJ/kg
- 10) LPG calorific value 45,600kJ/kg
- 11) Capacities include filler and bitumen
- 12) Aggregate is non-porous and not excessively flaky

1 COLD FEED UNIT

1.1 HOPPERS

Hoppers	-	One six (6) compartment
Capacity	-	15 m ³ trimmed/17 m ³ heaped (each hopper)
Loading width	-	4 m
Loading height	-	4.5 m approx
Material	-	6mm thick mild steel plate
Supports	-	Of rolled steel section down to ground level
Vibrator (s)	-	Two (2) fitted to sand and dust hoppers
Guards	-	Mesh panel guards fitted along non-feed side of hoppers
Grids	-	200mm aperture
Spill plates	-	Fitted to hopper sides and back to prevent contamination

1.2 BELT FEEDERS

Feeders	-	Six (6) variable speed
Size	-	750mm wide x 1800mm centres
Type	-	Sidewall belts
Feeder body	-	Flanged for bolting to feed hopper
Radial door	-	For manual calibration
Head drum	-	Shaft mounted running in plummer block bearings
Tail drum	-	Shaft mounted running in slide bearings for belt adjustment
Belt	-	750mm wide 3 ply with vulcanised joint
Idlers	-	Flat, bolted to steel section support frame
Drive	-	3 kw AC geared motor
Turndown ratio	-	20:1

- Feeder control - From remote operator's console. Variable speed is via AC inverter with gang control on console to vary feeder output.
- Starvation switches - Fitted to each feeder. In the event of no-flow, an alarm is generated in the cabin.

1.3 COLLECTING CONVEYOR

- Collecting conveyor - Horizontal, mounted under feeders
- Belt - 800mm wide 3 ply with vulcanised joint
- Idlers - Troughed bolted to steel section support frame
- Drive - 7.5 kw gear motor unit direct on head shaft
- Belt tensioning - Tension bolts fitted to tail drum slide bearings
- Belt scraper - Torsion arm type fitted under head drum
- Emergency grab wire - Fitted full length on one side
- Guarding - Mesh panel guards fitted to drive

1.4 DRYER FEED CONVEYOR

- Feed conveyor - From collecting conveyor to dryer
- Belt - 800mm wide 3 ply with vulcanised joint
- Idlers - Troughed bolted to steel section support frame
- Drive - 11 kw geared motor
- Belt tensioning - Tension bolts fitted to tail drum slide bearings
- Belt scraper - Torsion arm type fitted under head drum
- Emergency grab wire - Fitted full length on both sides
- Guarding - Mesh panel guards fitted to drive

2 ROTARY DRYER

2.1 DRYER

- Capacity - 340 tph
- Diameter - 2.8 metres
- Length - 10 metres
- Thickness - 15mm welded steel plate

Lifters	-	Replaceable folded steel plate
Roller paths	-	Machined on all faces on heat expansion Z brackets
Support rollers	-	Nylon running on shafts mounted in plummer block bearings steel supported on dryer chassis
Thrust rollers	-	Nylon running on shafts mounted in plummer block bearings supported on dryer chassis
Feed end box	-	Fabricated in 6mm mild steel with flanged connection for dust collection
Discharge end box	-	Fabricated in 8mm mild steel with lined chute to elevator and housing discharge paddle ring
Insulation	-	50mm thick mineral wool with galvanised steel cladding
Drive	-	Four (4) x 30 kw gear motor units. Friction drive via support rollers
Guard fence	-	2 metre high peripheral fence to enclose the dryer section and dryer feed conveyor including personnel access gate and 3 m wide double hinged gate, both fitted with an electric safety lock

2.2 DRYER PYROMETER

Temperature sensor	-	Pyrometer mounted in dryer discharge chute to record aggregate discharge temperature with indicating temperature on VDU
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2.3 DUEL FUEL BURNER

Type	-	RAX JET 4 dual fuel, gas oil and LPG fired with flame failure detection and radial blade control. Suitable for Gas oil, heavy fuel oil (pre-heated) and LPG
Fuel capacity	-	Gas oil - 2000 Kg/h (calorific value 42,700 kJ/kg)
	-	LPG - 1870 m ³ /h (calorific value 45,600 kJ/kg)

	-	kJ/m ³)
Thermal output	-	23,720 kW, maximum
Turn down ratio	-	Gas oil 8:1, LPG 6:1
Control	-	Remote control from operators console
Ignition	-	Propane and spark ignition electrodes
LPG delivery	-	By customer, to be in liquid form and delivered via a separate pump at 10 bar.
Gas oil fuel piping	-	Between fuel pump and burner and including pressure relief valve and filter
Fuel pump motor	-	7.5 kw
Blower motor	-	45 kw

2.4 COMBUSTION HEAD

Comprising	-	Steel casing for mounting to the burner support with track permitting easy removal for inspection and maintenance
	-	Adjustable combustion air-flow regulators
	-	Gas pilot with electric ignition
	-	Multi jet LPG vaporising nozzle assembly
	-	High temperature resistant swirl plate
Flame detection	-	Photo-cell, ultraviolet

2.5 BURNER CONTROL

Flame adjustment	-	Electric servo-assisted modulator
Air flow	-	Double cam arrangement for control of air/gas and air/fuel oil ratio
Gas oil control	-	Regulator fitted
LPG flow control	-	Valve regulated via servo motor
LPG safety	-	Main shut off valve, gas pressure gauge, two (2) magnetic shut off valves, gas pressure monitor (max-min) and emergency shut off valve included

2.6 BURNER COMPRESSOR

Compressor - Single 11 kw to give 7 bar to burner nozzle and dryer discharge pyrometer

Note

Client is responsible for providing a LPG supply at 10 Bar pressure with a delivery rate of 2,000Nm³/h and all necessary gas safety equipment.

3 SCREENING AND MIXING TOWER

Modular construction tower with external galvanised platforming and access stairways from ground level to screen level with galvanised ladder provided to elevator head. Mixer discharge height 4 m above ground level.

3.1 HOT STONE ELEVATOR

Elevator - Totally enclosed
Capacity - 340 tph
Bucket width - 700 mm replaceable steel buckets
Chain - Twin strand, 19 m centres
Drive - 30 kw motor via reduction gearbox with backstop
Soft start - Fitted to provide controlled start up
Casing - Fabricated in 3mm and 6mm mild steel plate with inspection doors at head and tail
Discharge - Chute to screen
Tensioning - Spring tensioning on tail shaft

3.2 SCREEN BYPASS

Screen bypass - Chute to screen incorporating two way pneumatically operated flap door and chute to bypass screen and discharge “all in” material into one (1) independent hot stone bin compartment

3.3 SCREEN

- Capacity - 320 tph
- Size - 2.2 m wide x 4 m long x 5 decks to give five (5) sizes plus rejects
- Drive - Two (2) x 15 kw motors
- Dust sealing - Totally enclosed in a fabricated steel enclosure with removable panels
- Insulation - Side walls, roof and doors of screen dust enclosure insulated with mineral wool and clad with steel panels
- Screen meshes - Access gained from removable discharge chutes and hinged doors in dust enclosure

3.4 OVERSIZE/REJECT DIVERTER CHUTE

- Diverter chute - Pneumatically operated diverter chute to facilitate either discharging of oversize/reject aggregate to ground or transfer to bin five (5)

3.5 STORAGE HOPPER

- Hot stone bins - Five (5) compartment, 60 tonne capacity
- Plate thickness - 6mm steel plate
- Outlet doors - Pneumatically operated radial type twin rams for coarse and fine discharge control
- Overflow/rejects - Chute provided down to ground level
- Level indicators - Continuous level type
- Insulation - 75mm thick mineral wool with galvanised steel cladding to vertical faces

3.6 AGGREGATE WEIGH HOPPER

- Capacity - 4250 Kg load cell mounted
- Load cells - Four (4)
- Plate thickness - 6mm steel plate
- Discharge doors - Twin, semi-rotary, pneumatically operated

Dust sealing - Via high temperature resistant rubber

3.7 FILLER WEIGH HOPPER

Capacity - 900 Kg load cell mounted

Load cells - Three (3)

Plate thickness - 3mm steel plate

Discharge door - Pneumatically operated butterfly valve

Dust sealing - Via high temperature resistant rubber

3.8 BITUMEN WEIGH HOPPER

Capacity - 650 Kg load cell mounted

Load cells - Three (3)

Plate thickness - 3mm steel plate

Heating - Hopper fully insulated and electrically heated

Discharge - Bitumen delivered into mixer via pipework
and spray bar over mixer

3.9 PADDLE MIXER

Mixer body - Fabricated from 10mm thick steel plate

Paddle shafts - Twin contra-rotating shafts in plummer block
bearings

Capacity - 4250 Kg

Body liners - Abrasive resistant segmented for ease of
replacement and full utilisation

Discharge door - Semi rotary, pneumatically operated by two
heavy-duty cylinders, wear resistant liners
bolted to door

Paddle arms - Manufactured from cast steel with replaceable
paddle tips made from alloy steel

Drive - Two (2) x 45 kw shaft mounted gear motor units
with timing shaft

3.10 MIXER DISCHARGE CHUTE

Chute - Discharge chute mounted below mixer to guide
mixed material into hot storage skip car

3.11 MIXER PYROMETER

- Temperature sensor - Pyrometer mounted under the mixer to record discharge temperature with indicating temperature on existing VDU and computer batch print out.

3.12 PNEUMATICS

- Compressor - Single 15 kw to give 6.5 bar
- Pneumatics - Solenoid valves, nylon pipework and fittings

4 PRIMARY AND SECONDARY DUST COLLECTION TC 560

4.1 CAPACITY	-	Dryer	101,400 m ³ /hr	(59,650 cfm)
		Nuisance	15,725 m ³ /hr	(9,250 cfm)
		Silo vent	1,700 m ³ /hr	(1000 cfm)
		Total	118,825 m ³ /hr	(69,900 cfm)

4.2 FIRST STAGE

- First stage - Primary inertial skimmer separator and hopper
- Outlet - Continuously discharging coarse dust into elevator feed boot via 7.5 kw inclined screw conveyor and gravity flap valve

4.3 SECOND STAGE

- Second stage - Reverse air cleaning type bag filter
- Filter medium - Aramid 400g/sq m (560 double bags)
- Filter area - 1,372 sq m
- Filtration velocity - 1.44 m/min
- Emission level - Less than 20mg/cu m provided the filter is maintained in accordance with our operating instructions

4.4 FILTER CABINET

- Filter cabinet - Top section fabricated from 3mm and 5mm mild steel plate mounted on mid-section
- Plenum plate - 5mm thick with laser cut holes for positive bag sealing
- Filter mid section - Mid-section fabricated from 3mm and 5mm mild steel plate mounted on trough hopper
- Insulation - 30mm high density mineral wool with plastic coated angular profile sheeting

4.5 CLEANING

- Cleaning mechanism - Induced reverse air type.
During cleaning sequence, the mechanism opens a small number of bags to atmosphere for a short duration, to allow the exhaust fan to induce a reverse flow of air for bag cleaning.
Operated by two (2) 0.75 kw geared motor.

4.6 TROUGH HOPPER

- Trough hopper - Fabricated in 3mm steel plate fitted with 7.5 kw reversible screw conveyor to twin dust outlets
- Insulation - 50mm mineral wool with galvanised steel cladding
- Level indicator - High level fitted in trough hopper
- Additional outlet - Fitted to provide feed to dust conditioner

4.7 DUST TRANSFER

- Screw conveyor - 30 tph delivering collected dust from filter to reclaimed filler elevator
- Drive - 7.5 kw shaft mounted geared motor
- Rotary valve - 300mm sq with 1.1 kw geared motor

4.8 FAN UNIT

- Fan unit - Backward inclined centrifugal
- Drive - 160 kw motor via vee ropes
- Exhaust stack - Fabricated in 6mm thick mild steel plate with flanged sections to a height of 22 metres

4.9 DUCTING

- Ducting - All interconnecting ducting included, also incorporating connection to dust nuisance points on the mixing section
- Dryer to skimmer - 3mm straight, 5mm bends
- Skimmer to filter - 3mm straight, 3mm bends
- Filter to exhaust fan - 3mm straight, 3mm bends
- Nuisance ducting - 3mm straight, 3mm bends

4.10 AIR VOLUME CONTROL

- Inverter - Adjusting air volume from plant, controlled by a transducer monitoring dryer pressure
- Indication - Inverter speed indicator mounted on remote operator's panel

4.11 BAG PROTECTION

- Bag protection - Two temperature probes fitted in duct prior to filter to protect bags from high gas temperatures.
- Indication - Vacuum gauge provided to indicate pressure drop across the bag filter and control the filter cleaning system.

4.12 DUST MONITOR

- Dust monitor - Particle impingement type with sensor/transmitter head bolted to exhaust stack

- Data logging - Signal fed to PC control system where the average dust mg/m³ displayed and logged for future reference

5 CONTAINERISED CONTROL HOUSE

5.1 CONTROL HOUSE

- Size - 6 m long x 2.4 m wide
- Construction - Corrugated sheet steel clad container style
- Base frame - Constructed from rolled steel section
- Roof - Sheet steel. Roof void fully insulated with 50mm mineral wool
- Floor - Wooden floor with steel bracings, covered with heavy-duty floor tiles
- Walls - Clad internally with decorative boarding. Walls fully insulated with 50mm mineral wool
- Windows - Three sides double-glazed
- Lighting - Overhead fluorescent lights fitted
- Heating - Air conditioning unit with wall mounted heater
- Door - 800mm wide access door
- Power - Three double socket outlets

6 PLANT CONTROL SYSTEM (Located in control house)

- 6.1 MOTOR PANEL** - With mains-in isolator switch with door interlock, control transformer and essential services enclosure with separate isolator
- Contactors - Combination circuit breakers/contactors
- 6.2 CONTROL DESK** - Containing computer mimic diagram, key switch for manual/auto control, manual start/stop buttons, cold feed control, burner control and PLC weigh/mix control system

- 6.3 WEIGH/MIX** - PC based control system consisting of the following: -
- Standard PC Pentium IV-3000 with 500MB RAM, two (2) 19" flat screen LCD monitor, 80Gb hard disk, Optical Mouse, Keyboard, CD-WRITER and Modem (minimum specification). Battery back-up for uninterruptible power supply to protect the PC from power spikes etc.
 - Allen-Bradley 500 series PLC, supplied in a 10-slot rack, (additional racks supplied for further options).
 - 80 column 9-pin printer.
 - Interconnection cables and operators manual.

7 IMPORTED FILLER STORAGE SILO

7.1 IMPORTED SILO

- Silo - One (1) vertical imported silo
- Capacity - 60 m³
- Level indicator - High level
- Aeration - At outlet cone
- Vent - Automatic reverse air vent filter
- Discharge - Butterfly valve and 11 kw inclined feed screw to filler weigh hopper
- Fill pipe - Tanker fill pipe
- Silo protection - Imported filler silo is protected via a safety system incorporating a cut off valve in the silo fill pipe with electronic high pressure switch, audio and visual alarms

8 RECLAIMED FILLER STORAGE SILO & ELEVATOR

8.1 RECLAIMED SILO

Silo	-	One (1) vertical reclaimed silo
Capacity	-	60 m ³
Level indicator	-	High level
Aeration	-	At outlet cone
Vent	-	To dust collection ducting
Discharge	-	Butterfly valve and 5.5 kw and 7.5 kw inclined feed screws to filler weigh hopper

8.2 RECLAIMED DUST ELEVATOR

Elevator	-	Fully enclosed
Position	-	Adjacent to the reclaimed filler storage silo to convey reclaimed dust from bag filter transfer screw conveyor to silo
Capacity	-	30 tph approx
Type	-	Belt and bucket with centrifugal discharge
Drive	-	5.5 kw shaft mounted gear motor with back stop
Casing	-	Fabricated in 3mm and 6mm mild steel plate with inspection doors at head and tail
Discharge	-	Chute to reclaimed filler silo
Tensioning	-	Screw tensioning on tail shaft

9 DUST CONDITIONER SYSTEM

9.1 DUST CONDITIONER

Type	-	Centrifugal type
Rotary valve	-	300mm square inlet rotary valve with 1.1 kw geared motor drive.
Conditioner	-	25 tph with 15 kw geared motor drive

- Casing construction - Mild steel body with non stick wear resistant lining
- Mixing paddles - Shaft mounted spiral feed zone followed by conditioning zone fitted with high strength wear resistant mixing paddles
- Shaft drive - Single shaft driven by direct mounted gear motor
- Water sprays - Three (3) radially mounted non - ferrous hollow spray nozzles with large openings to reduce the possibility of clogging

9.2 WATER TANK AND PUMP

- Tank - 2250 litre capacity, fully galvanised. Tank fitted with float level valve, immersion heater with frost stat, overflow and drain connections
- Pump - Centrifugal type with 1.5 kw drive motor
- Pipe work - Pipe work from pump to conditioner complete with pressure relief valve, flow control valve, pressure gauge, and solenoid valve

9.3 SUPPORT STRUCTURE

- Structure - Structure from rolled steel sections with suitable bracings supporting conditioner to give 3 m high discharge and 3.5 m wide clearance for vehicle access.
- Platform - Complete with maintenance platform with galvanised hand railing around ends and one side of the conditioner with vertical cage access ladder

9.4 RECLAIMED DUST SCREW

- Dust transfer - From filter trough hopper to dust conditioner
- Drive - 5.5 kw shaft mounted gear motor

10 SMA FIBRE ADDITIVE SYSTEM

10.1 FIBRE PELLETT SILO

- Construction - Fabricated in mild steel of 2.9 m dia and 9 m high mounted at ground level adjacent to mixing section
- Capacity - 14 tonne based on a density of 500 Kg/m³
- Location - Within 15 m of the mixer
- Venting - Automatically operated venting system during silo filling process
- Tanker loading - Fill pipe mounted at ground level to facilitate the discharge of fibre pellets from delivery tanker to silo with high level alarm
- Access - Via galvanised vertical caged ladder with intermediate staged platform
- Silo roof - Fitted with galvanised hand rail and kick strip around circumference

10.2 WEIGH FEED SCREW CONVEYOR

- Screw conveyor - 2.2 kw inclined screw conveyor transferring fibre pellets from silo to weigh hopper

10.3 FIBRE WEIGH HOPPER

- Weigh hopper - Load cell mounted weigh hopper
- Batch discharge - Via rotary valve and pneumatic conveyor transferring batch of fibre into the paddle mixer
- Pneumatic conveyor - Centrifugal type blower with 15 kw drive motor and pneumatic transfer pipe from blower to paddle mixer

11 **“WETMIX” ADDITIVE SYSTEM**

11.1 **DOSING PUMP**

Type	-	Peristaltic type hose pump
Construction	-	Cast iron pump head and rotor
Capacity	-	4.5 LPM (Maximum 0.5% “Wetmix” dose into a 7% bitumen content mixed material batch)
Mounting	-	Galvanised steel support frame for ground mounting
Location	-	Adjacent to mixing tower structure support leg Positioned to allow gravity feed to pump inlet from storage container

11.2 **CONNECTING PIPE WORK**

Pump delivery	-	25mm nominal bore x 4m long flexible connecting hose from local IBC storage container to pump inlet.
Pump discharge	-	25mm nominal bore x 4m long flexible hose with suitable hose supports to connect dosing pump outlet to bitumen weigh hopper

12 **200 TONNE MIXED MATERIAL STORAGE SYSTEM**

12.1 **MIXED MATERIAL STORAGE SYSTEM**

Storage hoppers	-	Two (2) insulated hoppers fabricated from steel plate
Capacity	-	200 Tonnes split 90/110 tonnes based on a density of 1800 Kg/m ³

- High level indicators - High level for each silo
- Hopper insulation - 150mm thick mineral wool with plastic coated cladding
- Hopper inlet - Pneumatically operated top cover door
- Hopper outlet - Pneumatically operated, insulated radial discharge door
- Heating - Discharge doors heated with thermostatic controlled electric heating elements
- Foul batch hopper - 5 Tonne un-lagged hopper with radial door
- Skip car - 4250 Kg capacity mounted on flanged wheels and insulated with 50mm thick mineral wool
- Skip track - Inclined and made from cross-braced rolled steel section.
- Direct loading - Bottom section may be hinged up to allow direct lorry loading from paddle mixer
- Winch unit - Inverter controlled 90 kw motor and disc brake via a reduction gearbox directly coupled to the winding drum, which is mounted on roller bearings
- Skip operation - A pulse counter is mounted at the winch to provide skip positional information and ultimate limits are located at both ends of the track
- Support structure - Rolled steel sections to give 4 metres discharge clearance beneath storage hoppers
- Safety controls - Slack rope sensing beam under winch, second top ultimate cuts power to winch motor, over speed monitoring and brake wear alarm
- Access gate - Galvanised access gate to skip walkway access mounted on one side to prevent access whilst skip is in operation. Skip and hot storage top access locked off during operation with key interlocked system

- Winch guarding - Ground mounted skip winch unit enclosed in galvanised safety fence locked off during operation with key interlocked system to prevent access whilst skip is in operation

12.2 PNEUMATICS

- Air receiver - Air receiver mounted on mixed material storage structure
- Pneumatics - Solenoid valves, nylon pipework and fittings

13 BITUMEN STORAGE SYSTEM

13.1 VERTICAL TANKS (60 TONNE)

- Tanks - Two (2) vertical
- Capacity - Based on the following:
The specific gravity of the stored bitumen used to calculate the bitumen tank capacities as noted below are based on a specific gravity of 0.92 s.g.
Nominal tank capacity 60 tonnes
- Construction - Cylindrical construction
- Material - Carbon steel BSEN10 025 grade Fe430B
- Cylinder - Fabricated in 6mm
- Tank base - Fabricated in 6mm
- Tank roof - Fabricated in 5mm
- Design pressure - Atmospheric

13.2 TANK FITTINGS

- Manway - Bolted side and top manway
- Brackets - Four (4) holding down brackets
- Lifting lugs - One (1) set of lifting lugs
- Fill inlet (bottom) - 80mm NP16 bottom fill inlet
- Draw off outlet - 100mm NP16 draw off outlet
- Drain outlet - 80mm NP16 drain outlet with blanking flange

Vent/overflow	-	100mm vent/overflow pipe manufactured out of Inox material fitted to the outside of the tank
Mounting flange	-	Immersion heater mounting flange
High level switch	-	Connection for electronic high level switch
Contents gauge	-	Connection for electronic contents gauge
Earthing	-	Earthing boss
Instrument pockets	-	Three (3) instrument pockets
Fill pipe	-	80mm fill pipe with delivery hose connection flange
Drain outlet flange	-	80mm drain outlet flange located within the tank lagging and cladding to provide emergency draining point

13.3 INSULATION AND CLADDING

Insulation density	-	All surfaces are lagged with 60 Kg/m ³ high density mineral wool
Insulation	-	Tank insulated with 200mm thick mineral wool
Cladding	-	Angular plastic coated profiled sheeting

13.4 HEATING AND CONTROLS

Heating	-	Multi-bank full width flange mounted immersion heaters with nine (9) independent removable elements
Total load	-	Electric, 45 kw each
Control panel	-	Lockable IP55 cabinet with weather canopy
Glazed door	-	Lockable glazed door protecting visible instrumentation, controls and lamp indication
Panel isolator	-	125A 3-pole door isolator
Control voltage	-	110/50 volt control circuit
Controls	-	Contactors/MCCB protection for heating circuit with 24/7 digital timer fascia mounted with battery back-up
Temperature control	-	Digital bitumen temperature controller with PT100 input and 4-20mA re-transmission output

- Switching - 3-stage switching complete with set down
- Thermostat - High temperature filled system thermostat with a range of 120-215° C
- Radar level indicator - Tank roof mounted high level control guide wave radar level indicator
- Contents display - Control panel mounted contents display and controller with high level warning activation
- High level probe - Tank roof mounted capacitive high level probe with control panel test facility
- Contents panel - Contents panel mounted at tank fill point containing contents gauge, low level lamp indication, high level siren and beacon and ultimate high level siren and beacon

13.5 MOTORIZED STIRRER

- Stirrer - One (1) vertical motorized fluid stirrer fitted per tank, positioned on flanged mounting stool to agitate bitumen and additives in storage tank
- Drive - One (1) 5.5 kw geared motor per tank driving via coupling to a single vertical shaft with an intermediate and bottom bronze steady bearing assembly
- Shaft impellers - Each shaft fitted with three (3) triple blade high efficiency impellor assemblies
- Seals - Packed gland seal arrangement contained within purpose built flanged mounting spigot

13.6 TANK ROOF ACCESS

- Tank roof access - Via one (1) galvanised vertical caged ladder in two (2) sections with intermediate staged platform
- Safety gates - Two (2) galvanised hinged safety gates positioned at the top of each vertical ladder section for access safety purposes

- Tank roof - Fitted with galvanised hand rail and kick strip around circumference to provide safe access on tank roof. Platform bridge to provide access between tanks

13.7 BITUMEN PUMP

- Pump - One (1) external, rotary gear type with electric heating
- Capacity - 48,000 litres per hour
- Drive - 15 kw motor direct coupled to pump

13.8 VALVES

- Tank outlet valves - Three (3) 100mm manually actuated two-way valves
- Safety gate valves - Three (3) manual gate valves for safety and maintenance purposes
- Delivery valves - One (1) pneumatically operated three-way trans-flow valves complete with actuator to provide low level ring main for delivery and return to tanks

13.9 BITUMEN PIPEWORK

- Pipework - Bitumen delivery pipework to bitumen weigh hopper manufactured in 100mm NB medium black tube with NP16 flanged connections
- Supports - Pipework suitably supported
- Heating - Via Cupro nickel 240 volt trace heating attached to the bitumen pipe work arranged in thermostatically controlled zones with clear "Power On" lamp indication
- Insulation - 25mm thick pre-formed rigid section mineral wool
- Cladding - Aluminium cladding to pipe work with access boxes on all flanges and valves

13.10 BITUMEN FILL SYSTEM

- Pump - One (1) independent, rotary gear type bitumen pump electrically heated, mounted on separate frame to accept tanker deliveries
- Connection - Flange connection to accept bitumen tank delivery feed line
- Selection valve - Manually operated, electrically heated valve to allow tanker driver to select designated tank
- Capacity - 48,000 litres per hour
- Drive - 15 kw motor direct coupled to pump
- Drain valve - Fitted

14 PLANT LIGHTING**14.1 FLOOD LIGHTS**

- Hot storage - Two (2) 400 watt SON lamps on both sides of the loading bays
- Cold feed section - One (1) 400 watt SON lamp on Hot elevator directed over cold feeders
- Bag filter - One (1) 400 watt SON lamp on tower directed over filter
- Bitumen tanks - One (1) 400 watt SON lamp on tower directed over bitumen tanks

- 14.3 CONTROL** - The lighting will be operated via switches in the control cabin. The lights will automatically switch on at dusk by control from a light detector.

15 WIRING

Each section of plant is pre-wired for quick electrical installation on site.
Motor isolation switches are fitted to all drives as required.

16 INSTALLATION AND COMMISSIONING

Delivery of the Parker StarMix 4000 asphalt plant to your South Wales site plus supplying necessary mechanical and electrical engineers to install and commission the aforementioned plant.

Inclusive of all craneage, man platforms and hand tools to undertake the above.

Customer to provide employer liability insurance for labour they supply.

GUARDS

Safety guards are provided over all V rope drives, chain drives and spur gears.

STEELWORK

All welds to be cleaned as necessary, steelwork to be wire brushed and generally cleaned of all mill scale etc before painting.

PAINTING

All external surfaces are painted with one-coat single pack zinc phosphate primer, followed by a high build semi-gloss topcoat enamel finish.

All ducting, stack and parts subject to heat are painted with heat resistant paint

Any plastic coated PVC will be self-coloured.

COLOUR

Steelwork Merlin grey

Sheeting Goosewing

Ladders, handrailing and platforms galvanised

VOLTAGE

400 Volt, 3 phase, 50 Hz

MANUALS

We include for two complete sets of operators and maintenance instruction manuals and illustrated spare parts manuals

OPTIONAL EQUIPMENT

OPTION 1

17 FREE-STANDING FEED HOPPER CANOPY OVER EXISTING HOPPERS

17.1 FREE STANDING FEED HOPPER CANOPY

- | | | |
|-------------------|---|---|
| Support structure | - | Free standing rolled steel section to form an independent cross-braced frame to be bolted to customers foundations to meet BSEN1090-1 requirements, to cover feed hopper section. |
| Hopper canopy | - | Feed unit is clad along three sides and roof with plastic coated angular profile sheeting |

OPTION 2

18 ADDITIONAL SIX (6) BIN COLD FEED UNIT, GRIDS & CANOPY

18.1 HOPPERS

- | | | |
|----------------|---|--|
| Hoppers | - | One six (6) compartment |
| Capacity | - | 15 m ³ trimmed/17 m ³ heaped (each hopper) |
| Loading width | - | 4 m |
| Loading height | - | 4.5 m approx |
| Material | - | 6mm thick mild steel plate |
| Supports | - | Of rolled steel section down to ground level |
| Vibrator (s) | - | Two (2) fitted to sand and dust hoppers |
| Guards | - | Mesh panel guards fitted along non-feed side of hoppers |
| Grids | - | 200mm aperture |
| Spill plates | - | Fitted to hopper sides and back to prevent contamination |

18.2 BELT FEEDERS

- Feeders - Six (6) variable speed
- Size - 750mm wide x 1800mm centres
- Type - Sidewall belts
- Feeder body - Flanged for bolting to feed hopper
- Radial door - For manual calibration
- Head drum - Shaft mounted running in plummer block bearings
- Tail drum - Shaft mounted running in slide bearings for belt adjustment
- Belt - 750mm wide 3 ply with vulcanised joint
- Idlers - Flat, bolted to steel section support frame
- Drive - 3 kw AC geared motor
- Turndown ratio - 20:1
- Feeder control - From remote operator's console. Variable speed is via AC inverter with gang control on console to vary feeder output.
- Starvation switches - Fitted to each feeder. In the event of no-flow, an alarm is generated in the cabin

18.3 FREE STANDING FEED HOPPER CANOPY

- Support structure - Free standing rolled steel section to form an independent cross-braced frame to be bolted to customers foundations to meet BSEN1090-1 requirements, to cover feed hopper section.
- Hopper canopy - Feed unit is clad along three sides and roof with plastic coated angular profile sheeting

18.4 COLLECTING CONVEYOR

- Collecting conveyor - Horizontal, mounted under feeders
- Belt - 800mm wide 3 ply with vulcanised joint
- Idlers - Troughed bolted to steel section support frame
- Drive - 7.5 kw gear motor unit direct on head shaft
- Belt tensioning - Tension bolts fitted to tail drum slide bearings

- Belt scraper - Torsion arm type fitted under head drum
- Emergency grab wire - Fitted full length on one side
- Guarding - Mesh panel guards fitted to drive

OPTION 3

19 CONTROL HOUSE AND OFFICE

19.1 CONTROL HOUSE

- Size - 34' long x 12' wide
- Base frame - Constructed from rolled steel section
- Construction - Steel panels fitted between rolled steel sections with plastic coated exterior finish
- Roof - Sheet steel construction with, insulated with 6" encapsulated rockfibre
- Floor - Wooden floor with steel bracings, covered with heavy-duty floor tiles, insulated with 4" rockfibre slab, foil faced both sides
- Walls - Clad internally with decorative boarding, insulated with 2" rockfibre slab, foil faced both sides
- Room divider - Internal partition insulated with 2" rockfibre slab, foil faced both sides with internal door between control house and office
- Windows - Three sides double-glazed, operators end of control house
- Ticket window - Double sliding, glazed window on one side to allow manual issuing of tickets
- Lighting - Overhead LED panel lights fitted per room
- HVAC - Two (2) zonal heating and air conditioning units, one (1) per room
- External doors - Two (2) steel access doors, one (1) per room

- Power - Six (6) double socket outlets and four (4) single sockets

19.2 ACCESS

- Access platform - Via galvanized platform and stairway with handrails and kick strip

OPTION 4

20 100 TONNE VERTICAL BITUMEN STORAGE SYSTEM

20.1 VERTICAL TANK (100 TONNE)

- Tank - One (1) vertical
- Capacity - Based on the following:
The specific gravity of the stored bitumen used to calculate the bitumen tank capacities as noted below are based on a specific gravity of **0.92 s.g.**
Nominal tank capacity **100 tonnes**
- Construction - Cylindrical construction
- Material - Carbon steel BSEN10 025 grade Fe430B
- Cylinder - Fabricated in 6mm
- Tank base - Fabricated in 6mm
- Tank roof - Fabricated in 5mm
- Design pressure - Atmospheric

20.2 TANK FITTINGS

- Manway - Bolted side and top manway
- Brackets - Four (4) holding down brackets
- Lifting lugs - One (1) set of lifting lugs
- Fill inlet (bottom) - 80mm NP16 bottom fill inlet
- Draw off outlet - 100mm NP16 draw off outlet
- Drain outlet - 80mm NP16 drain outlet with blanking flange
- Vent/overflow - 100mm vent/overflow pipe manufactured out of Inox material fitted to the outside of the tank

Mounting flange	-	Immersion heater mounting flange
High level switch	-	Connection for electronic high level switch
Contents gauge	-	Connection for electronic contents gauge
Earthing	-	Earthing boss
Instrument pockets	-	Three (3) instrument pockets
Fill pipe	-	80mm fill pipe with delivery hose connection flange
Drain outlet flange	-	80mm drain outlet flange located within the tank lagging and cladding to provide emergency draining point

20.3 INSULATION AND CLADDING

Insulation density	-	All surfaces are lagged with 60 Kg/m ³ high density mineral wool
Insulation	-	Tank insulated with 200mm thick mineral wool
Cladding	-	Angular plastic coated profiled sheeting

20.4 HEATING AND CONTROLS

Heating	-	Multi-bank full width flange mounted immersion heaters with sixteen (16) independent removable elements
Total load	-	Electric, 80 kw each
Control panel	-	Lockable IP55 cabinet with weather canopy
Glazed door	-	Lockable glazed door protecting visible instrumentation, controls and lamp indication
Panel isolator	-	125A 3-pole door isolator
Control voltage	-	110/50 volt control circuit
Controls	-	Contactors/MCCB protection for heating circuit with 24/7 digital timer fascia mounted with battery back-up
Temperature control	-	Digital bitumen temperature controller with PT100 input and 4-20mA re-transmission output
Switching	-	3-stage switching complete with set down

- Thermostat - High temperature filled system thermostat with a range of 120-215° C
- Radar level indicator - Tank roof mounted high level control guide wave radar level indicator
- Contents display - Control panel mounted contents display and controller with high level warning activation
- High level probe - Tank roof mounted capacitive high level probe with control panel test facility
- Contents panel - Contents panel mounted at tank fill point containing contents gauge, low level lamp indication, high level siren and beacon and ultimate high level siren and beacon

20.5 TANK ROOF ACCESS

- Tank roof access - Via one (1) galvanised vertical caged ladder in two (2) sections with intermediate staged platform
- Safety gates - Two (2) galvanised hinged safety gates positioned at the top of each vertical ladder section for access safety purposes
- Tank roof - Fitted with galvanised hand rail and kick strip around circumference to provide safe access on tank roof. Platform bridge to provide access between tanks

20.6 BITUMEN PUMP

- Pump - One (1) external, rotary gear type with electric heating
- Capacity - 48,000 litres per hour
- Drive - 15 kw motor direct coupled to pump

20.7 VALVES

- Tank outlet valves - Three (3) 100mm manually actuated two-way valves
- Safety gate valves - Three (3) manual gate valves for safety and maintenance purposes
- Delivery valves - One (1) pneumatically operated three-way trans-flow valves complete with actuator to provide low level ring main for delivery and return to tanks

20.8 BITUMEN PIPEWORK

- Pipework - Bitumen delivery pipework to bitumen weigh hopper manufactured in 100mm NB medium black tube with NP16 flanged connections
- Supports - Pipework suitably supported
- Heating - Via Cupro nickel 240 volt trace heating attached to the bitumen pipe work arranged in thermostatically controlled zones with clear "Power On" lamp indication
- Insulation - 25mm thick pre-formed rigid section mineral wool
- Cladding - Aluminium cladding to pipe work with access boxes on all flanges and valves

OPTION 5**21 RECYCLED ASPHALT (RAP) SYSTEM**

The recycled asphalt feed system is designed to process up to a maximum RAP feed of 20% of the plant capacity at 2% moisture. Capacities are subject to moisture content, quality of RAP material, mix cycle time, dryer and bag filter capabilities to superheat the virgin aggregates.

21.1 FEED HOPPER

- Hopper - 12 m³ capacity trimmed, steep angled
- Loading width - 4.0 metres
- Loading height - 4.1 metres approx

Material	-	6mm thick mild steel plate
Liners	-	Low-friction ultra-high molecular weight polyethylene liners are fitted to the sloping surfaces of the feed hopper
Vibrators	-	Two (2) fitted
Hopper canopy	-	Hopper clad along three sides and roof with plastic coated angular profile sheeting
Spill plates	-	Fitted to hopper sides and back to prevent contamination and also to protect sheeting

21.2 RAP BELT FEEDER

Feeder	-	Variable speed type
Size	-	650mm wide x 4 m crs. approx
Head drum	-	Shaft mounted running in pedestal bearings
Tail drum	-	Shaft mounted running in slide bearings attached to screwed rod for belt adjustment
Belt	-	650mm wide 3 ply, 4mm x 2mm covers vulcanised joint
Idlers	-	Trough type, bolted to rolled steel section support frame
Drive	-	5.5 kw AC geared motor direct coupled to feeder head shaft
Turndown ratio	-	20:1
Feeder control	-	From remote operator's console. Variable speed via AC inverter
Starvation switch	-	Fitted to feeder. In the event of no-flow, an alarm is generated in the cabin.

21.3 FREE STANDING FEED HOPPER CANOPY

Support structure	-	Free standing rolled steel section to form an independent cross-braced frame to be bolted to customers foundations to meet BSEN1090-1 requirements, to cover feed hopper section.
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- Hopper canopy - Feed unit is clad along three sides and roof with plastic coated angular profile sheeting

21.4 RAP FEED CONVEYOR

- Conveyor - Troughed belt, inclined
- Size - 650mm wide x **40 m crs** approx
- Belt - 650mm wide 3 ply, 4mm x 2mm covers
- Tensioning - Tension bolts fitted to the tail drum slide bearings
- Idlers - Multi-trough 102mm dia top idlers and 100mm dia parallel bottom return idlers
- Feed boot - 6mm thick mild steel plate construction with adjustable rubber sealing strip
- Belt scraper - Torsion arm type fitted
- Drums - Steel construction with machined crown faces.
Lagged drive drum
- Drive - 7.5 kw motorgear unit with holdback device
- Conveyor frame - Braced steel of welded and bolted construction
- Support trestles - Welded and bolted rolled steel sections
- Head supports - Welded and bolted of rolled steel sections, suitably braced and tied to form supports for the conveyor head section
- Covers - Dust/weather shielding forming roof and both sides belt protection, manufactured from galvanised sheeting to facilitate removal of side protection by one operative for maintenance purposes
- Discharge chute - Fabricated in 6mm thick mild steel plate, discharging into bypass chute

21.5 BYPASS FACILITY

- Bypass chute - Pneumatically operated bypass chute fabricated in 6mm thick mild steel plate to allow calibration and emptying of RAP hopper and feed conveyor via bypass discharge chute direct to truck

21.6 MIXER WEIGH FEEDER

- Feeder - Variable speed type. Mounted on four (4) loadcells at mixer level with feed boot and enclosure to mixer housing
- Size - 650mm wide x 2.8 m centres
- Head drum - Shaft mounted running in plummer block bearings
- Tail drum - Shaft mounted running in slide bearings for belt adjustment
- Belt - 650mm wide 3 ply with vulcanised joint
- Idlers - Flat, bolted to steel section support frame
- Drive - 4 kw gear motor unit direct on head shaft
- Discharge chute - Discharge chute to mixer fitted with vibrator

21.7 SUPPORT STRUCTURE

- Structure - Support structure to allow RAP conveyor and mixer weigh feeder to be positioned adjacent to the mixing tower
- Platform - Platforms to allow maintenance access to RAP conveyor head section and mixer weigh feeder complete with hand railing

21.8 MIXER STEAM EVACUATION SYSTEM

- Steam vent - Ducting from mixer cover to paddle type fan to extract steam created upon introduction of RAP material into mixer

- | | | |
|----------------|---|---|
| Cut-off door | - | Pneumatically operated and solenoid controlled to close when not processing RAP materials |
| Ducting | - | Ducting from fan discharges into plant ducting |
| Extraction fan | - | With 11 kw motor, positioned outside the tower on a new platform with handrailing and access as required. |

NOTE:-RAP. MATERIAL - LUMP SIZE AND AGGREGATE CONTENT

For batch production asphalt plants the feed lump size should be reduced to pass a 40mm screen aperture and the aggregate size in the RAP material must not exceed the maximum permitted size of aggregate specified for the final mixed product.

OPTION 6

22 ADDITIONAL 130 TONNE MIXED MATERIAL STORAGE HOPPER FOR EXISTING 200 TONNE MIXED MATERIAL STORAGE SYSTEM

22.1 MIXED MATERIAL STORAGE SYSTEM

- | | | |
|-------------------|---|---|
| Storage hopper | - | One (1) insulated hoppers fabricated from mild steel plate |
| Capacity | - | 130 tonnes, based on a density of 1800 Kg/m ³ |
| Level indication | - | High level for each silo |
| Hopper insulation | - | 150mm thick mineral wool with plastic coated cladding |
| Hopper inlet | - | Pneumatically operated top cover door |
| Hopper outlet | - | Pneumatically operated, insulated radial discharge door |
| Heating | - | Discharge doors heated with thermostatic controlled electric heating elements |
| Support structure | - | Rolled steel sections to give 4 metres discharge clearance beneath storage hopper |

22.2 SKIP TRACK

- Skip track - Extension to skip track and supports to facilitate new storage bins into the existing mix material arrangement. Inclusive of additional guarding, skip stop and electrical components

22.3 PNEUMATICS

- Pneumatics - Additional solenoid valves, nylon pipework and fittings for the bin top and bottom door operation

OPTION 7**23 210 TONNE LOADCELL MOUNTED MIXED MATERIAL STORAGE SYSTEM****23.1 MIXED MATERIAL STORAGE SYSTEM**

- Storage hoppers - Three (3) insulated hoppers fabricated from steel plate
- Load cells - Hoppers mounted on four (4) load cells.
- Capacity - 210 tonnes split 50/70/90 tonnes based on a density of 1800 kg/m³
- Level indication - High level for each silo
- Hopper insulation - 150mm thick mineral wool with plastic coated cladding
- Hopper inlet - Pneumatically operated top cover door
- Hopper outlet - Pneumatically operated, insulated radial discharge door
- Heating - Discharge doors and cone sections heated with thermostatic controlled electric heating elements
- Foul batch hopper - 5 tonne unlagged hopper with radial door
- Skip car - 4250 kg capacity mounted on flanged wheels and insulated with 50mm thick mineral wool

-
- | | | |
|---------------------|---|--|
| Chute | - | Discharge chute mounted below mixer to guide mixed material into hot storage skip car |
| Skip track | - | Inclined and made from cross-braced rolled steel section |
| Skip track housing | - | The skip track will be located within a steel structure with plastic coated sheeting to roof and two sides for weather protection |
| Winch unit | - | Inverter controlled 90 kw motor and disc brake via a reduction gearbox directly coupled to the winding drum, which is mounted on roller bearings |
| Skip operation | - | A pulse counter is mounted at the winch to provide skip positional information and ultimate limits are located at both ends of the track |
| Support structure | - | Rolled steel sections to give 4 metres discharge clearance beneath storage hoppers |
| Safety controls | - | Slack rope sensing beam under winch, second top ultimate cuts power to winch motor, over speed monitoring and brake wear alarm |
| Mixer guarding | - | Galvanised panel guarding around mixer discharge to skip car with hinged access gates and key interlock system for direct lorry loading |
| Skip track guarding | - | Galvanised access gate to hot storage top section to prevent access during operation with key interlock system |
| Winch guarding | - | Ground mounted skip winch unit enclosed in galvanised safety fence to prevent access whilst skip is in operation with key interlocked system |

23.2 PNEUMATICS

- | | | |
|--------------|---|--|
| Air receiver | - | Air receiver mounted on mixed material storage structure |
| Pneumatics | - | Solenoid valves, nylon pipe work and fittings |

StarMix 4000 Asphalt Plant Motor List

Item	Quantity	Motor	Starter	kW	Total kW
1.	6	Feeder motors	Inverter	3	18
2.	2	Vibrators	DOL	0.3	0.6
3.	1	Collecting conveyor	DOL	7.5	7.5
4.	1	Dryer feed conveyor	DOL	11	11
5.	4	Dryer	Soft start	30	120
6.	1	Burner blower	Soft start	45	45
7.	1	Fuel pump	DOL	7.5	7.5
8.	1	Burner compressor	DOL	11	11
9.	1	Hot elevator	Soft start	30	30
10.	2	Screen	DOL	15	30
11.	2	Mixer	Soft start	45	90
12.	1	Compressor	DOL	15	15
13.	1	Coarse dust screw	DOL	7.5	7.5
14.	2	Cleaning mechanism	Inverter	0.75	1.5
15.	1	Filter screw	DOL	7.5	7.5
16.	1	Dust screw	DOL	7.5	7.5
17.	1	Rotary valve	DOL	1.1	1.1
18.	1	Exhaust fan	Inverter	160	160
19.	1	Dust elevator	DOL	5.5	5.5
20.	1	Imported dust screw	DOL	11	11
21.	1	Recl. dust screw	DOL	5.5	5.5
22.	1	Recl. dust screw	DOL	7.5	7.5
23.	1	Dust conditioner	DOL	15	15
24.	1	Water pump	DOL	1.5	1.5

25.	1	Recl. Dust screw	DOL	5.5	5.5
26.	1	Rotary valve	DOL	1.1	1.1
27.	1	Bitumen pump	Fwd/Rev	15	15
28.	1	Bitumen fill pump	DOL	15	15
29.	1	Skip winch	Inverter	90	90
30.	1	SMA Blower	DOL	15	15
31.	1	SMA screw conveyer	DOL	2.2	2.2

Total 760.50 kW

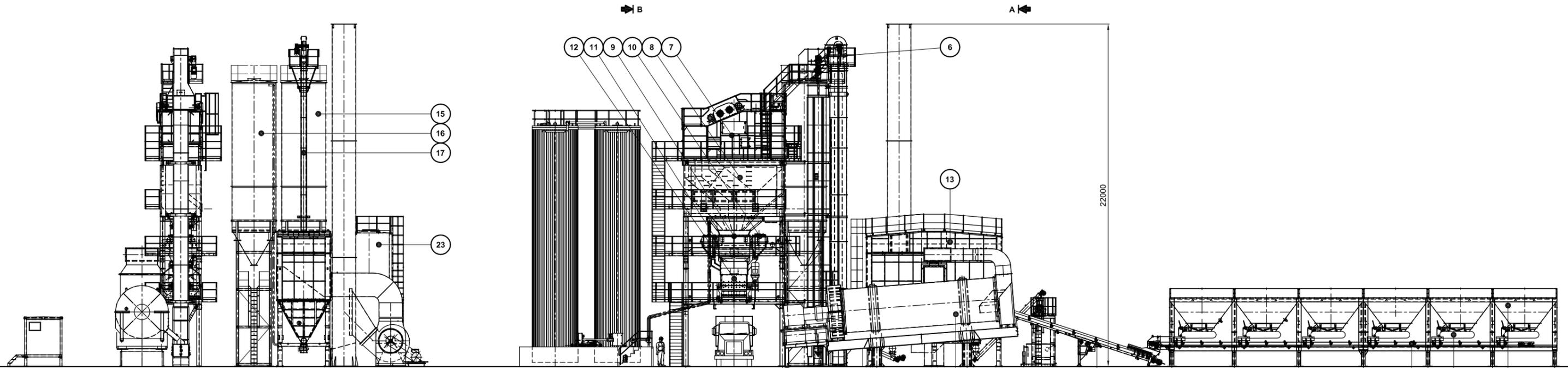
HEATING/OTHER SUPPLIES

32.	1	Bitumen weigh scale	1 ph + N	1	1
33.	2	Storage silo heating	3 ph + N	3	6
34.	3	Bitumen tank heating	3 ph + N	45	135
35.	3	Motorized stirrers	3 ph + N	5.5	16.5
36.	6	Trace heating	3 ph + N	3	18
37.	1	Winch supply	3 ph + N	1	1
38.	1	Cabin supply	1 ph + N	10	10

Total 187.50 kW

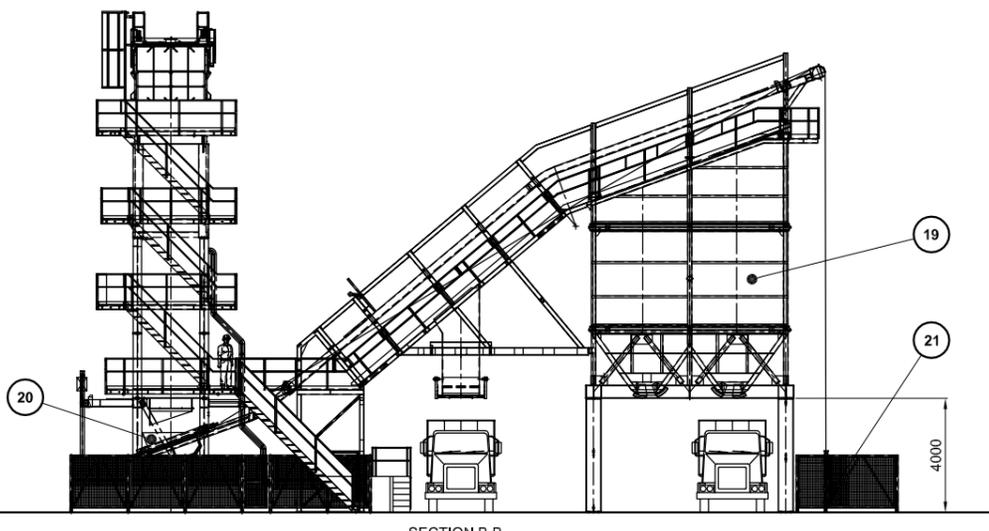
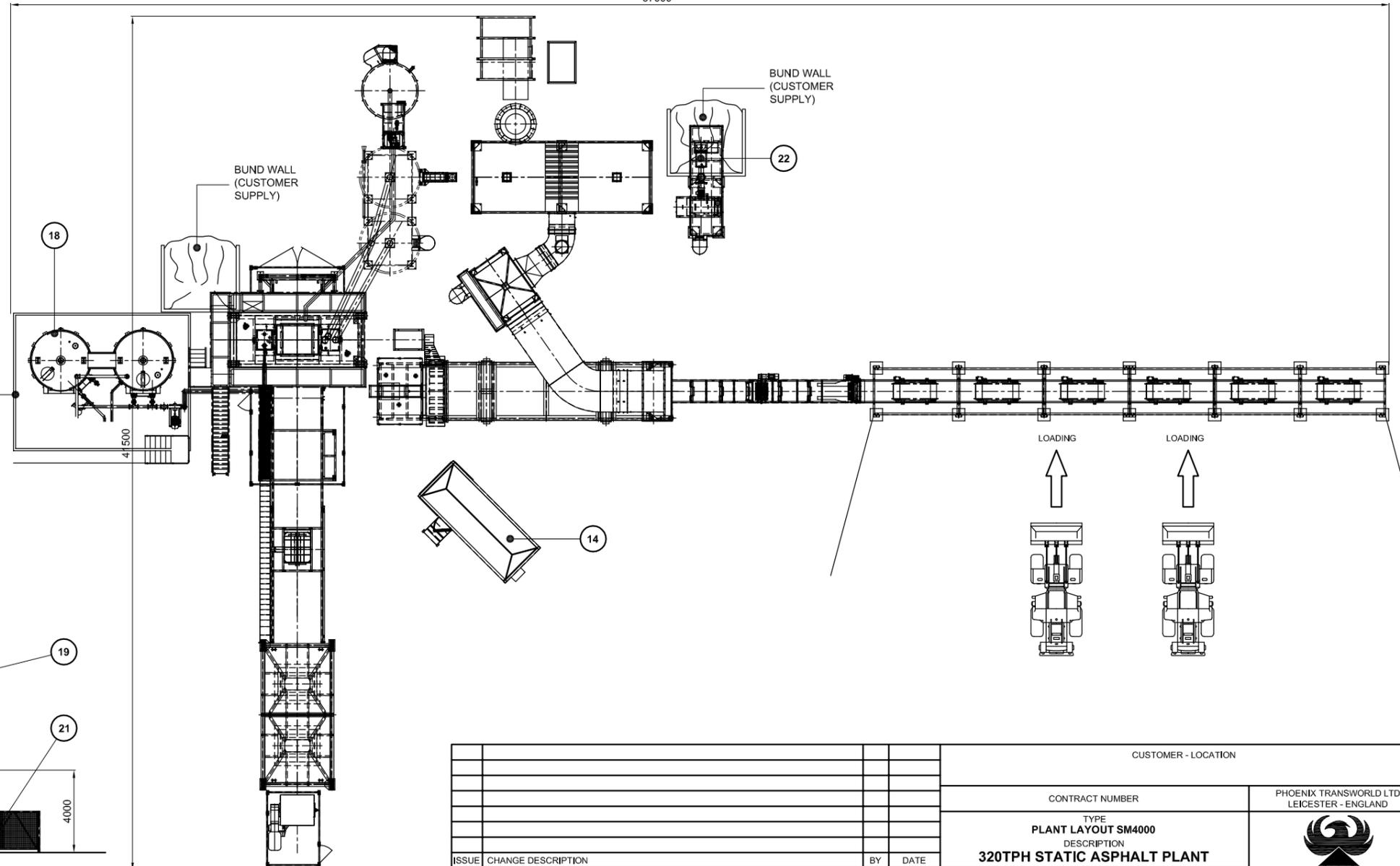
APPENDIX 4

Technical Drawings of Asphalt Batching Plant



SECTION A-A

REF	DESCRIPTION
1	6-OFF HOPPERS - 12 cu.m.TRIMMED 15 cu.m.HEAPED
2	750 WIDE x 1800 CRS BELT FEEDERS - VARIABLE SPEED 3 KW
3	800 WIDE COLLECTING CONVEYOR 7.5 KW
4	800 WIDE DRYER FEED CONVEYOR 11 KW
5	2.8 DIA.x10.0 LG.ROTARY DRYER - 4 x 30 KW
6	700 WIDE BUCKET ELEVATOR - 30 KW
7	2.2 x 4.0 x 5 DECK SCREEN - 2 x18.5 KW
8	5 COMPARTMENT STORAGE HOPPER - 60 TONNE CAPACITY
9	AGGREGATE WEIGH HOPPER - 4250 KGS CAPACITY
10	FILLER WEIGH HOPPER - 900 KGS CAPACITY
11	BITUMEN WEIGH HOPPER - 650 KGS CAPACITY
12	4250 KGS. CAPACITY PADDLE MIXER - 2 x 37 KW GEARMOTORS
13	DUST COLLECTION - SKIMMER & BAG FILTER - 118825 CUM/HR
14	CONTROL CABIN
15	RECLAIM FILLER STORAGE SILO 60 cu.m
16	IMPORTED FILLER STORAGE SILO 60 cu.m
17	RECLAIMED DUST ELEVATOR
18	2-OFF BITUMEN TANKS 60 TONNE CAPACITY
19	200 TONNE MIXED MATERIAL STORAGE
20	4250KG MIXED MATERIAL SKIP
21	MIXED MATERIAL WINCH 90 KW
22	DUST CONDITIONER
23	FIBRE PELLET ADDITIVE SYSTEM



SECTION B-B

ISSUE		CHANGE DESCRIPTION		BY	DATE	CUSTOMER - LOCATION			
DO NOT SCALE IF IN DOUBT ASK 1ST ANGLE UNLESS OTHERWISE STATED: DIMENSIONS IN MM						SCALE: 1:125	CONTRACT NUMBER		
DRN: PS CHK: APP:						DATE: 9/7/15	TYPE PLANT LAYOUT SM4000		
© THIS DRAWING IS THE PROPERTY OF PHOENIX TRANSWORLD LTD & MUST NOT BE REPRODUCED OR COPIED WITHOUT WRITTEN CONSENT						DRG SIZE A1	DESCRIPTION 320TPH STATIC ASPHALT PLANT		
						DRAWING NO PP1802	ISSUE NO 1		
						PHOENIX TRANSWORLD LTD LEICESTER - ENGLAND			



APPENDIX 5

SLR's IEMA Certificate



This is to certify that

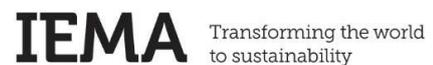
SLR Consulting Ltd

is a member of the

EIA Quality Mark

For the period 2017-2018*

*Subject to meeting the requirements of registration



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