LLANDARCY ASPHALT PLANT

Drainage Impact Assessment

Prepared for: G D Harries and Sons Ltd.

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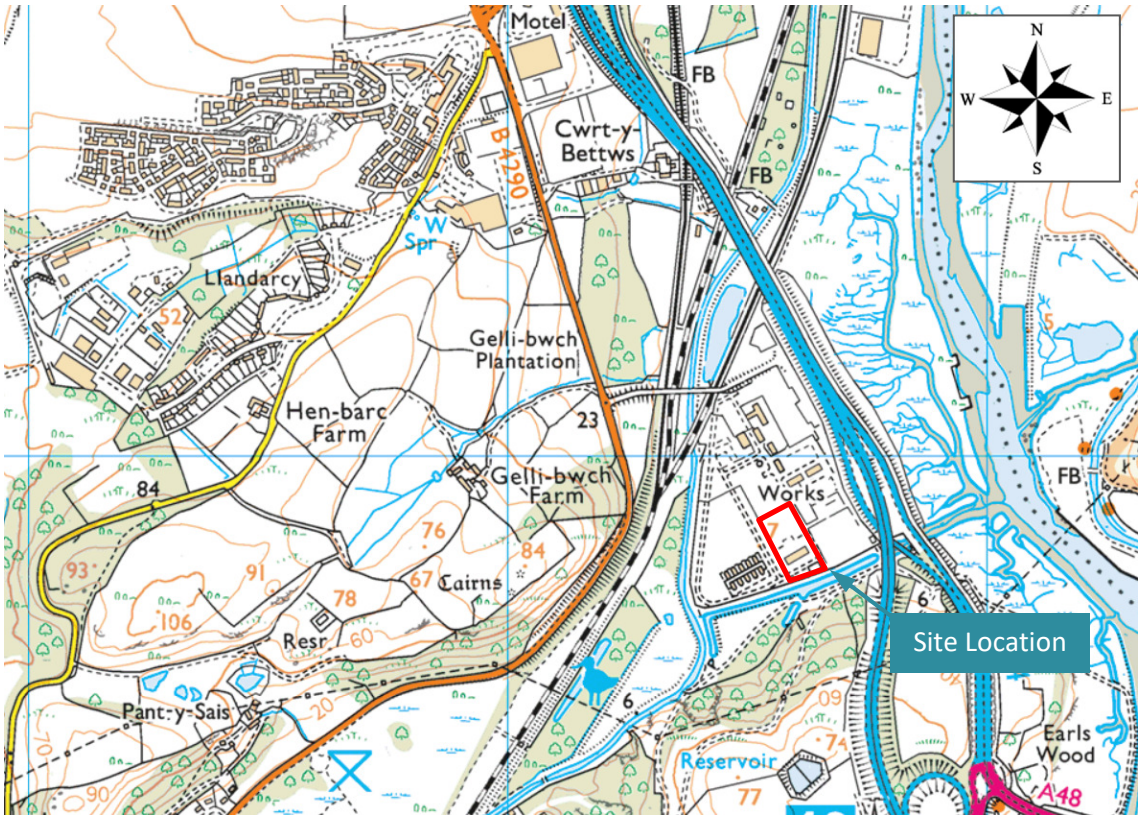
Drawing 005: Drainage Details

1.0 INTRODUCTION

1.1 Terms of Reference

SLR Consulting Limited (SLR) was appointed by G D Harries and Sons Ltd. (GDH) to prepare a Drainage Impact Assessment (DIA) to support an application for Sustainable Drainage Approving Body (SAB) Approval – Wales for the proposed development of an Asphalt Plant at the former E M Edwards Works, Llandarcy, Skewen, Neath, SA10 6JY (the Site) as shown by Figure 1-1 and Drawing 001.

Figure 1-1: Site Location Plan



This report has been prepared under the guidance and direction of a SLR Technical Director who specialises in surface water management and drainage design. A site visit was completed on 14 June 2022.

1.2 Pre-application Consultations

1.2.1 June 2021

A pre-application submission was made to the Neath Port Talbot County Borough Council SAB on 10 June 2021 by JBA Consulting (JBA) on behalf of GDH. A copy of the SAB response to the pre-application is enclosed at Appendix 01.

1.2.2 July 2022

SLR was subsequently retained by GDH to develop the preliminary sustainable drainage prepared by JBA following the granting of planning permission. As part of the review, SLR has recommended a different approach

to the management of surface water runoff, and in particular addressing water quality issues, and it was therefore considered prudent to seek the views of the SAB on the revised design before seeking formal approval.

A second pre-application submission was therefore made in July 2022. A copy of the SAB response to the second pre-application is enclosed at Appendix 02.

1.3 Site Location

The Site is located at the former E M Edwards Works, Llandarcy, Skewen, Neath at National Grid Reference SS725948 as shown by Figure 1-1 and Drawing 001.

The Site is bounded to the south by the Red Jacket Pil and on all other sides by industrial development.

1.4 Existing Site Uses

The Site extends to approximately 1.2 hectares (ha) and is currently laid almost entirely to hardstanding. The site is occupied by a workshop building and garage as shown by the topographic site survey enclosed at Appendix 03.

Access to the Site is from an internal industrial estate road.

1.5 Proposed Development

Planning permission for the development reference P2021/1019 comprising the '*Construction and operation of proposed Asphalt Plant together with aggregates storage area, weighbridge, offices and ancillary infrastructure works*' was granted by Neath Port Talbot County Borough Council on 18 October 2021.

A copy of the site development plan is enclosed at Appendix 04.

2.0 SITE APPRAISAL

2.1 Topography

A topographic site survey was completed by GDH in May 2022 and is enclosed at Appendix 03.

With reference to the survey, the Site is essentially flat with a very shallow fall from a level of circa 7.3m above Ordnance Datum (AOD) at the northern boundary to circa 7.1mAOD at the southern boundary adjacent to the Red Jacket Pil.

2.2 Hydrological Features

As noted in Section 1.0, the Red Jacket Pill flows to the west along the southern boundary of the Site joining the Afon Nedd that flows in a southerly direction approximately 400m to the west.

The Tennant Canal for the western side of the wider industrial site approximately 250m to the west of the Site,

2.3 Existing Drainage Arrangements

The topographic survey indicates that there is some surface water drainage infrastructure serving the Site, however, it has not been possible to establish where it drains.

A decision has been taken not to commit significant resources to cleansing and tracing the existing drainage system at this stage as it is unlikely that it could be adapted to serve the new operational development area.

Where the drainage system serves parts of the site that are not to be redeveloped, such as the workshop building, the existing drainage will be retained. The only exception is car park to the rear of the workshop building that is to be refurbished. As part of these works, new drainage arrangements are to be provided and integrated into the system serving the proposed operational area described in this DIA.

2.4 Geological and Hydrogeological Features

A Geotechnical and Geoenvironmental Investigation completed by Terra Firma in March 2021 reported that the Site is underlain by the *Birthdir Member – Sandstone* with a superficial deposit of *Tidal Flat Deposits - Clay, Silt And Sand*. The site investigation also recorded an approximate depth of 2.2m of made ground overlying the Tidal Flat Deposits.

Soakage tests completed in the made ground within the proposed operational area indicate an infiltration rate in excess of 3×10^{-3} ms^{-1}.

The report states that:

> *'Leachate testing has identified elevated concentrations of copper, lead, mercury, and selenium. However, these concentrations are relatively low and suggest that although the slag-rich soils contain high concentrations of metals and metalloids, the contaminants are not easily mobilised by leaching. It is also considered that the concentrations recorded by leachate testing in the laboratory are likely to be higher than those borne out in the field'*

and

> *'The use of soakaway stormwater drainage is therefore considered viable on site in the locations and depths tested'.*

With respect to the use of soakaways as a means of surface water disposal the report concludes:

> *'Based on the leachate test results (discussed in Section 7.3.2) it has been demonstrated that the use of soakaways is unlikely to significantly mobilise contaminants from the made ground. Groundwater was*

recorded at 3.0m below ground level in TP06. The shallow groundwater could therefore influence the use and depth of soakaway drainage. It is recommended that the groundwater level is monitored prior to soakaway design to check whether it is tidal, or whether it is influenced by rainfall'.

The use of soakaways as a means of surface water disposal is considered in Section 4.3.1.

3.0 FLOOD RISK

A Flood Consequence Assessment (FCA) was prepared by JBA and submitted in support of the Planning Application.

The FCA identified that the Site is located in Flood Zone C2 defined by TAN15[1] and described as areas at risk of flooding '*Without significant flood defence infrastructure*'.

However, the FCA concludes that the proposed development satisfies the requirements of the Justification Test, including managing flood risk in line with the acceptability criteria. The development therefore complies with the aims of TAN15 and Planning Policy Wales.

A copy of the FCA is enclosed at Appendix 05.

[1] Welsh Government, 2004. *Technical advice note (TAN) 15: development and flood risk*

4.0 CLIMATE CHANGE

4.1 Anticipated Lifetime of Development

In line best practice guidance, a conservative 75-year lifetime of development has been assumed for proposed development.

4.2 Peak Rainfall Intensity Allowance

The most recent advice on climate change is provided by the Welsh Government[2].

An extract of *Table 3 - Change to extreme rainfall intensity compared to a 1961-90 baseline* is reproduced as Table 4-1.

Table 4-1: Change to extreme rainfall intensity compared to a 1961-90 baseline

Applies across all of Wales	Total potential change anticipated for 2020s (2015-2039)	Total potential change anticipated for 2050s (2040-2069)	Total potential change anticipated for 2080s (2070-2115)
Upper estimate	10%	20%	40%
Central estimate	5%	10%	20%

The SAB response to the JBA pre-application submission indicates that a **30%** increase in peak rainfall allowance should be used for the design of the surface water drainage infrastructure. This has been adopted for the revised drainage scheme design presented in this assessment.

4.3 Tidal Flood Risk

As discussed at Section 3.0, the tidal flood risk to the Site has been considered by JBA in the FCA submitted in support of the planning application. However, the SAB response to the JBA pre-application submission advised that the sustainable drainage scheme should consider tide locking for the 5% (1 in 20) or 4% (1 in 25) AEP tidal flood event.

Extreme sea levels for a range of AEPs around the coastline of the UK are provided by the Coastal Flood Boundary (CFB) dataset, as published June 2021[3]. Extreme sea levels are provided at a series of locations along the coastline and in major estuaries, with each location assigned a chainage. As shown on **Error! Reference source not found.**, the closest data point to the Site is Chainage 484_3 in the Neath Estuary. The estimated 'present day' extreme sea levels are summarised in Table 4-2.

Taking a precautionary approach, the 4% (1 in 25) AEP tidal flood level has been adopted for the analysis.

[2] Welsh Government, September 2021. *Flood Consequences Assessments: Climate change allowances*
[3] Environment Agency, June 2021. *Coastal Design Sea Levels - Coastal Flood Boundary Extreme Sea Levels (2018)*

Figure 4-1: Extract from the Coastal Flood Boundary dataset

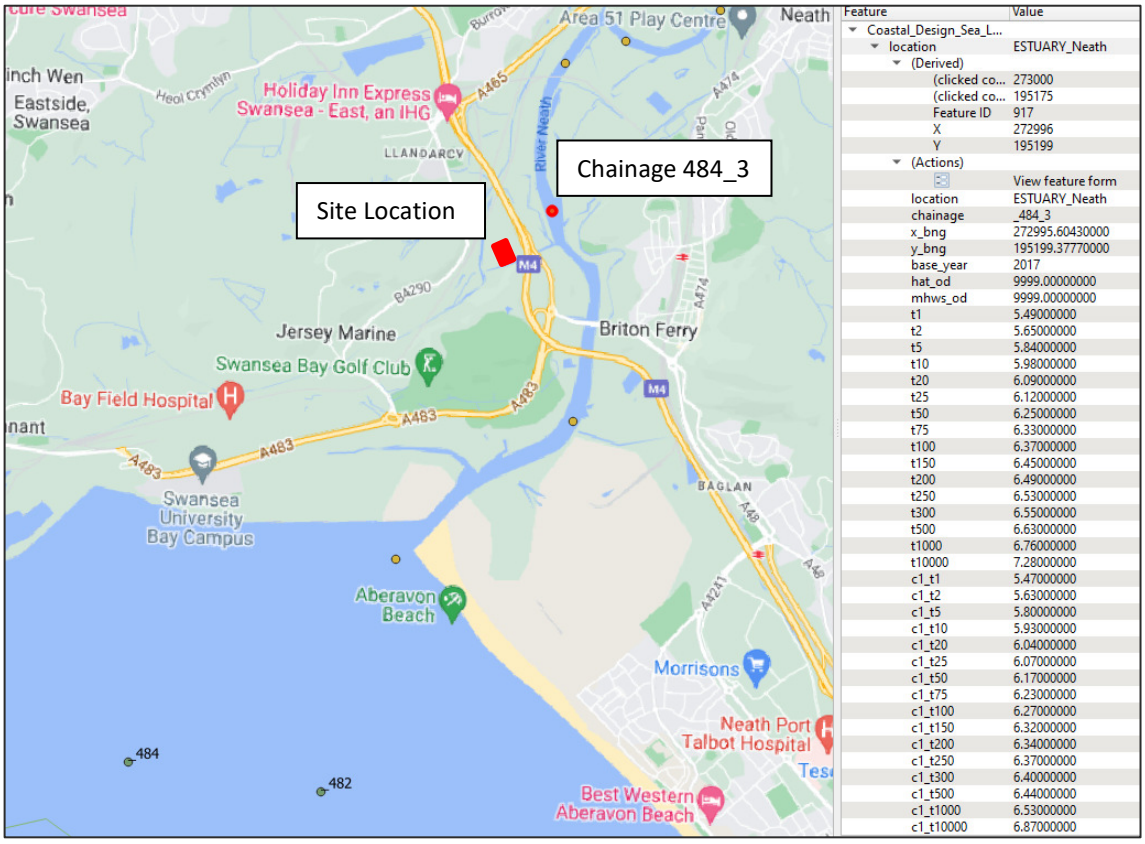


Table 4-2: Present Day Tidal Flood Levels

Annual Exceedance Probability	Tidal Level (m Above Ordnance Datum (AOD))
5% (1 in 20)	6.09
4% (1 in 25)	6.12

4.3.1 Welsh Government Climate Change Allowances

Climate change allowances are provided by the *Flood Consequences Assessments: Climate change allowances*[4] published by the Welsh Government. Table 3 of this guidance, *Estimated mean sea level rise (in metres) for relevant local authority areas by 2100 and 2120* provides the sea level rise allowances for each local authority area in Wales based on RCP8.5 70th and 95th percentiles.

The Site lies within Neath Port Talbot Local Authority Area and the sea level rise allowances as summarised in Table 4-3.

[4] https://www.gov.wales/sites/default/files/publications/2021-09/climate-change-allowances-and-flood-consequence-assessments_0.pdf

Table 4-3: Neath Port Talbot sea level rise allowances

Local Authority Area	Percentile	Mean sea level rise (m) by 2100	Mean sea level rise (m) by 2120
Neath Port Talbot	70th percentile (higher central allowance)	0.84	1.00
	95th percentile (upper end allowance)	1.11	1.32

Table 4-4 shows the application of these allowances to the 'present day' extreme sea level summarised in Table 4-2.

Table 4-4: Welsh Government extreme sea levels

AEP (%)	Extreme Sea Level (m AOD)			
	70th percentile		95th percentile	
	2100	2120	2100	2120
25	6.96	7.12	7.23	7.44

The lifetime of the proposed development is 75 years and with reference to the climate change guidance '*development proposals should be assessed against the relevant regional 70th percentile to inform design levels. An assessment should also be made against the 95th percentile to inform mitigation measures, access and egress routes and emergency evacuation plans*'.

It is therefore considered appropriate to adopt the 70th percentile 2100 extreme level of **6.96mAOD** for the tide locking analysis.

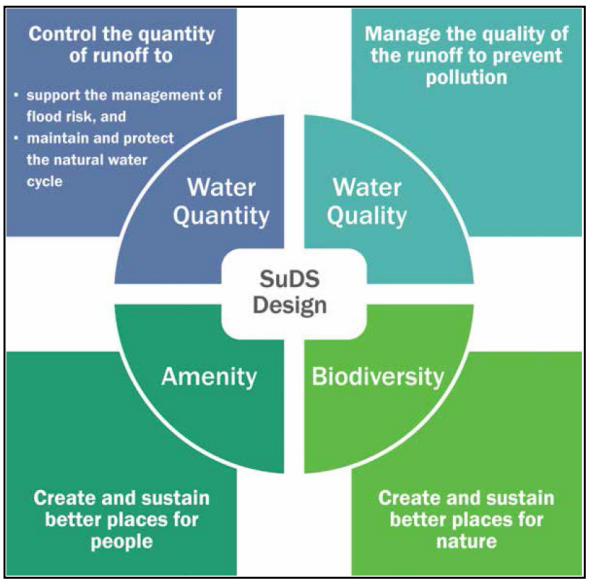
5.0 Surface Water Management Strategy

5.1 Sustainable (urban) Drainage Systems

Current best practice guidance relating to sustainable surface water management is outlined in the SuDS Manual (C753)[5] which provides details on the use of SuDS for managing surface water runoff.

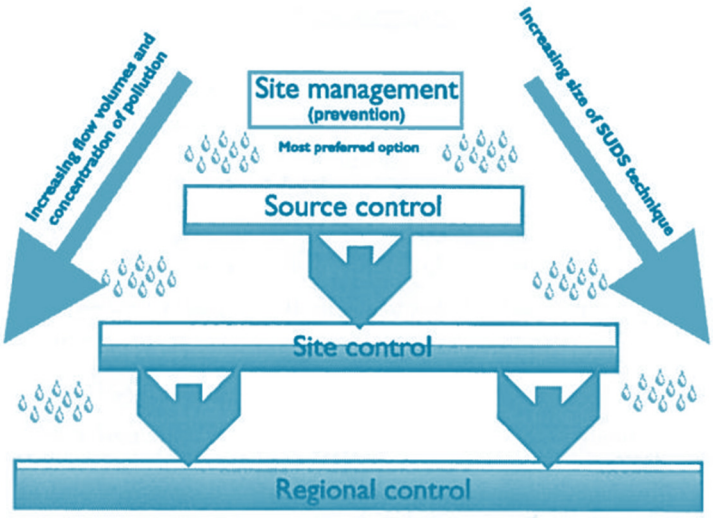
There are four main categories of SuDS which are referred to as the 'four pillars of SuDS design' and are depicted Figure 5-1.

Figure 5-1: Four Pillars of SuDS (after the SuDS Manual)



The SuDS Manual identifies a hierarchy of SuDS for managing runoff, which is commonly referred to as a 'management train' and is depicted in Figure 5-2.

Figure 5-2: SuDS Management Train



[5] CIRIA, 2015. *The SuDs Manual (C753)*

- **Prevention** – the use of good site design and housekeeping measures on individual sites to prevent runoff and pollution (e.g. minimise areas of hard standing).
- **Source Control** – control of runoff at or very near its source (such as the use of rainwater harvesting, permeable pavement and green roofs).
- **Site Control** – management of water from several sub-catchments (including routing water from roofs and car parks to one / several soakaways, below ground storage units or attenuation ponds for the whole site).
- **Regional Control** – management of runoff from several sites, typically in a retention pond or wetland.

It is generally accepted that the implementation of SuDS, as opposed to conventional drainage systems, provides several benefits by:

- reducing peak flows to watercourses or sewers and potentially reducing the risk of flooding downstream;
- reducing the volumes and frequency of water flowing directly to watercourses or sewers from developed sites;
- improving water quality over conventional surface water sewers by removing pollutants from diffuse pollutant sources;
- reducing potable water demand through rainwater harvesting;
- improving amenity through the provision of public open spaces and providing biodiversity and wildlife habitat enhancements; and
- replicating natural drainage patterns, including the recharge of groundwater so that base flows are maintained.

5.2 Sustainable Drainage Systems Standards for Wales

The Welsh Government has published the *Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems*[6] to support the implementation Flood and Water Management Act 2010 (Schedule 3) which came into effect in Wales on 7 January 2019.

In addition to referencing C753 as good practice guidance, the statutory standards provide an overarching set of principles in that SuDS schemes should aim to:

- manage water on or close to the surface and as close to the source of the runoff as possible;
- treat rainfall as a valuable natural resource;
- ensure pollution is prevented at source, rather than relying on the drainage system to treat or intercept it;
- manage rainfall to help protect people from increased flood risk, and the environment from morphological and associated ecological damage resulting from changes in flow rates, patterns and sediment movement caused by the development;
- take account of likely future pressures on flood risk, the environment and water resources such as climate change and urban creep;

[6] Welsh Government, 2018. *Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems*

- use the SuDS Management Train, using drainage components in series across a site to achieve a robust surface water management system (rather than using a single “end of pipe” feature, such as a pond, to serve the whole development);
- maximise the delivery of benefits for amenity and biodiversity;
- seek to make the best use of available land through multifunctional usage of public spaces and the public realm;
- perform safely, reliably and effectively over the design life of the development taking into account the need for reasonable levels of maintenance;
- avoid the need for pumping where possible; and
- be affordable, taking into account both construction and long-term maintenance costs and the additional environmental and social benefits afforded by the system.
- applications should be accompanied by proposals for a maintenance plan and the means of funding for the scheme for its design life

Six standards against which the SAB approval process will be determined are also provided:

- S1. Surface water runoff destination
- S2. Surface water runoff hydraulic control
- S3. Water Quality
- S4. Amenity
- S5. Biodiversity
- S6. Design of drainage for construction, operation and maintenance

A review of the proposed design against the six standards is presented in Sections 5.4 to 5.9 and concludes with a review of the drainage design against the Overarching Principles in Section 5.10.

5.3 Drainage Design

The drainage design for the proposed development is shown by Drawings 003 and 004.

5.3.1 Operational Area

The essentially flat site is to be reprofiled to provide a positively-drained surface.

The principal risk with respect to the quality of surface water runoff is considered to be from elevated concentrations of suspended solids, derived particularly from the delivery and movement of feed aggregates for the Asphalt Plant. Although the risk of elevated concentrations of suspended solids in the surface water runoff is mitigated by the covered aggregate storage bays.

For this reason, maintainability of the drainage system is an important aspect in its design and therefore the drainage of the operational area is to be by channel drains and two sections of swale separated by a Class 1 oil interceptor. In addition, catchpits are located at the end of the principle channel drain runs prior to discharge to the first section of swale.

The second section of swale is to be constructed along the southern boundary of the site with a final discharge to the Red Jacket Pil.

Preliminary discussions have been held with Natural Resources Wales (NRW) with respect to the permitting of the discharge to the Red Jacket Pil. NRW has confirmed that in addition to the proposed SuDS measures, the Class 1 oil interceptor is required.

A copy of the email correspondence with NRW is enclosed at Appendix 06.

5.3.2 Car Park

Whilst not included in the planning application, the SAB raised an issue with the runoff from the existing car park to the rear of the workshop building. It has not been possible to verify how this area is drained and therefore runoff from the car park has been catered for in the drainage design.

The car park will therefore be locally regraded and resurfaced as required to drain to a filter strip / shallow swale along the southern edge as shown by Drawing 004. It will then drain via the Class 1 oil interceptor and the swale to the Red Jacket Pill.

5.4 S1. Surface water runoff destination

The hierarchy of preferred disposal options for surface water runoff from development sites in decreasing order of sustainability required by the Standard is as follows:

Priority Level 1: Surface water runoff is collected for use;

Priority Level 2: Surface water runoff is infiltrated to ground;

Priority Level 3: Surface water runoff is discharged to a surface water body

Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system

Priority Level 5: Surface water runoff is discharged to a combined sewer

Table 5-1 summarises the suitability of disposal methods in the context of the Site and the proposed development.

Table 5-1: Suitability of Surface Water Disposal Methods

Surface Water Disposal Method	Suitability Description	Method Suitable? (Y / N)
Priority Level 1	Runoff from the roof of the proposed covered aggregate bays will be collected and used as a source of washdown water. Excess runoff will discharge to the swale. In addition, runoff can be drawn from the proposed siltation lagoon for reuse.	Y
Priority Level 2	Whilst the Geotechnical and Geoenvironmental Investigation indicates that soakaways may be an option for the disposal of surface water runoff, the potentially elevated groundwater levels are likely to reduce their effectiveness. Nevertheless, an unlined swale is to be incorporated within the drainage system that will permit infiltration, however, a discharge to the Red Jacket Pil will be the primary means of surface water disposal.	N

Surface Water Disposal Method	Suitability Description	Method Suitable? (Y / N)
Priority Level 3	The primary means for surface water disposal will be to the Red Jacket Pil.	Y
Priority Level 4	There are no surface water sewers in the vicinity of the Site to which a connection could be made.	N
Priority Level 5	There are no combined sewers in the vicinity of the Site to which a connection could be made.	N

5.5 S2. Surface water runoff hydraulic control

5.5.1 Impermeable Drained Areas

The area of hardstanding to serve the operational areas of the Asphalt Plant and the roof of the Aggregate Store extends to **0.64ha** as shown by Drawings 003 and 004.

The drained area of the car park to the rear of the existing workshop is **765m²**.

5.5.2 Allowable Discharge

With reference to The SuDS Manual:

> *'runoff should where possible be restricted to the greenfield 1 in 1 year [100% AEP] runoff rate during all events up to and including the 1 in 100 year [1% AEP] rainfall event with climate change.'*

This is also reflected in Standard S2.

However, Paragraph G2.1 of Standard S2 states:

> *This Standard applies to discharges to surface water bodies, surface water sewers or combined sewerage systems. However where the surface water body is unaffected by either the discharge rate or volume of runoff (e.g. an estuary, the sea or a water body identified in the Local Flood Risk Management Strategy (LFRMS) as not needing hydraulic control of runoff to it), the hydraulic management control requirements are limited to the drainage service provisions for the site and adjacent areas that could be affected by the performance of the drainage system.*

This indicates that no attenuation of the discharge to the tidally-dominated Red Jacket Pil will be required and this was accepted by the SAB in their response to the previous pre-application submission prepared by JBA.

5.5.3 Control of Runoff Volume

Section 3.3.1 of The SuDS Manual sets out volume control criteria for:

- Frequent rainfall events.
- Extreme rainfall events.

Frequent rainfall events

The SuDS Manual requires:

'the prevention of runoff from the [Site] for the majority of small (frequent) rainfall events (or for the initial depth of rainfall for larger events)'. This is known as Interception and 'Inception of about 5mm is normally achievable.'

With reference to Section 24.8 of The SuDS Manual:

'*Inception can be delivered using one or a combination of process:*

- *Rainwater harvesting*
- *Infiltration*
- *Evapotranspiration using temporary shallow ponding or storage within the soil or upper aggregate layers.*'

As the SAB has agreed that attenuation of runoff from the Site to the Red Jacket Pil is not required, this condition does not have to be explicitly met. However, a degree of infiltration from the swale can be anticipated and this, along with retention of runoff can be enhanced by setting the invert of the swale below the outgoing pipe to the Red Jacket Pil.

Extreme rainfall events

For extreme rainfall events, the drainage system should be designed such that '*the volume of runoff from the Site (or development) area [does] not exceed the volume of runoff from the equivalent area in its natural undeveloped or "greenfield" state*'.

Again, as the SAB has agreed that attenuation of runoff from the Site to the Red Jacket Pil is not required, this condition does not have to be explicitly met. Nevertheless, the swale is likely to allow a proportion of an extreme rainfall event to infiltrate to ground.

5.5.4 Hydraulic analysis and tide locking

The JBA FCA identified that the Site is at risk of flooding from extreme tidal events, albeit the risk is considered low.

Nevertheless, there is a risk that outfall to the Red Jacket Pil will become tide-locked on occasion. It is noted that agreement was reached with the SAB on the appropriate tide locking scenario and this has been adopted for the detailed design:

'The influence of tide locking on the outfall has been modelled for a life expectancy of the development of 75 years (2096) with no site flooding indicated for 1:100. A non-return valve is proposed for the outfall. Further information will be available in detailed design (for full app), but the principles seem ok for this pre app. Further construction details are required as part of the SAB approval. Climate change proposed is 20% we recommend 30% CC'.

The sustainable drainage system has been modelled using the industry standard MicroDrainage design and analysis package. The swales and settlement lagoon have been explicitly represented in the model and the design tested for tide locked conditions, i.e. a 1% AEP storm event allowing for a 30% increase in rainfall due to the impact of climate change with a 25% AEP 2100 tidal flood event. The tide locking profile has been derived from a spring tide profile for Baglan Bay and the 25% AEP 2100 peak tidal flood level.

Details of the analysis are enclosed at Appendix 07 and confirms that no flooding occurs for the critical 720 minute 1% AEP summer storm event allowing for the impact of climate change.

5.5.5 Design Exceedance Arrangement

The drainage strategy has also considered residual flood events i.e. those that are in excess of the design event.

If a storm event overwhelms the channel drainage system, some ponding of water could be expected on the areas of hardstanding, however, the proposed plant and vehicles serving it are likely to be resilient to the effects of a limited depth of flooding.

Excess flows will drain towards the Red Jacket Pil following the existing topography as shown by Drawings 003 and 004.

The proposed development will not create any locally low-lying area that could flood to any significant depth during an extreme event.

5.6 S3. Water Quality

To confirm the efficiency of the proposed water treatment process, the SAB requested that it is reviewed against the C753 '*simple index*' approach.

The risks associated with a number of typically drained surfaces (land uses) are assessed in Section 26 of the SuDS Manual and expressed in Table 26.2 as a potential *'Pollution hazard level'*. A review of proposed land use has been completed in reference to Table 26.2 of SuDS Manual to determine the appropriate *Pollution Hazard Levels*. Analysis has been completed for both the operational area and the car park

Operational area

The *Pollution hazard levels* appropriate to the operational area are summarised in Table 5-2.

Table 5-2: Pollution Hazard Level for Operational Area

Proposed Land Use	Pollution Hazard Level	Pollution Hazard Indices		
		Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Sites with heavy pollution	High	0.8	0.8	0.9

Table 26.3 of the SuDS Manual provides indicative '*Mitigation indices*' for a range of SuDS components where runoff is to be discharged to surface waters and are summarised in Table 5-3.

.

Table 5-3: Indicative SuDS Mitigation Indices for Discharges to Surface Waters

SuDS Component	SuDS Mitigation Indices		
	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Swale	0.5	0.6	0.6
Swale[1]	0.25	0.3	0.3
Total[1]	**0.75**	**0.9**	**0.9**

Notes:

[1] Total SuDS mitigation index = mitigation index$_1$ + 0.5 (mitigation index$_2$) + 0.5 (mitigation index$_3$)
Where: mitigation index$_n$ = mitigation index for component n

The two sections of Swale fall slightly short of providing a sufficient combined *SuDS Mitigation Index* for the suspended solids *Pollution Hazard Index*. However, as the SuDS elements are supplemented by the catchpits and the silt removal provided by the oil interceptor, the water quality requirements are considered to have been met.

Car park

The *Pollution hazard levels* appropriate to the car park are summarised in Table 5-4.

Table 5-4: Pollution Hazard Level for Car Park

Proposed Land Use	Pollution Hazard Level	Pollution Hazard Indices		
		Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Non-residential car parking with infrequent change	Low	0.5	0.4	0.4

Table 26.3 of the SuDS Manual provides indicative '*Mitigation indices*' for a range of SuDS components where runoff is to be discharged to surface waters and are summarised in Table 5-5.

Table 5-5: Indicative SuDS Mitigation Indices for Discharges to Surface Waters

SuDS Component	SuDS Mitigation Indices		
	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Filter strip	0.4	0.4	0.5
Swale[1]	0.25	0.3	0.3
Total[1]	**0.65**	**0.7**	**0.8**

Notes:

[1] Total SuDS mitigation index = mitigation $index_1$ + 0.5 (mitigation $index_2$) + 0.5 (mitigation $index_3$)
Where: mitigation $index_n$ = mitigation index for component n

As the *SuDS mitigation indices* are greater that the *Pollution Hazard Indices* the water quality requirements are deemed to have been met.

In addition, a Class 1 oil interceptor is to be installed downstream of the car park. No allowance of the additional treatment this will provide has be considered in the *simple index* approach described above.

5.7 S4. Amenity

It is proposed to provide an amenity area for operatives of the plant adjacent to the swale as shown by Drawing 004. Details of the amenity area planting are shown by the drawing enclosed at Appendix 08.

5.8 S5. Biodiversity

A Preliminary Ecological Report was prepared to support the planning application by Bay Ecology.

The report concluded that:

> *'In terms of the ecological importance of the site the hard standing was of negligible ecological value and represented the most suitable area of the site to support the asphalt plant development. The offsite southern boundary tidal canal was considered to be utilised by a variety of foraging and commuting mammals (e.g. Otter & bats), birds and potentially reptiles and should remain undisturbed as a dark wildlife corridor with no incidental site lighting'*

Bay Ecology also prepared a Biodiversity Enhancement Plan based on the JBA preliminary drainage strategy. This focused on the opportunities provided by the proposed swales and filter strips to enhance biodiversity.

The revised strategy that is the focus of this assessment retains the swales as a means of secondary water treatment, however, the filter strips have been replace by a formal drainage system that is considered more appropriate to the proposed use of the Site.

Nevertheless, the advice with respect to the swales will be followed to enhance the biodiversity of the southern boundary:

'The swale will be lined with low nutrient soil to encourage a diverse botanical range. The features will be seeded with a wet meadow seed mix which will be supplemented with reed, rush and sedge plug planting to provide a variety of sward height and to further clean and treat surface water.

It is recommended that the sown grassland within the features is mown once a year to encourage wildflower development at the end of the growing season in September and the cuttings removed from the site; whilst the features are inspected twice a year for signs of erosion damage, silt deposits, excessive waterlogging and poor vegetation growth.'

A copy of the Biodiversity Enhancement Plan is enclosed at Appendix 09 and the plan enclosed at Appendix 08 provides details of the proposed planting of the swales and filter strips

5.9 S6. Design of drainage for construction, operation and maintenance

The following plans demonstrate compliance with Standard S6:

- An Environmental Method Statement and Site Environmental Plan and Environmental Risk Assessment are provided at Appendix 10;
- A Construction Phase Health & Safety Plan is provided at Appendix 11; and
- A Drainage Maintenance Plan is provided at Appendix 12.

5.10 Adherence to Principles

Table 5-6 provides a summary of how the proposed drainage scheme will meet the overarching Principles.

Table 5-6: Adherence to Principles

Principle	Response
Manage water on or close to the surface and as close to the source of the runoff as possible;	The operational area will drain to a swale along its western edge via catchpits.
Treat rainfall as a valuable natural resource;	Runoff from the roof of the proposed covered aggregate bays will be collected and used as a source of washdown water. Excess runoff will discharge to the swale.
Ensure pollution is prevented at source, rather than relying on the drainage system to treat or intercept it;	The swales will treat the runoff as close as is practical to source prior to discharge to the Red Jacket Pil via a Class 1 oil interceptor and secondary swale. The oil interceptor is likely to be a requirement of the permit to discharge to the Red Jacket Pil.
Manage rainfall to help protect people from increased flood risk, and the environment from morphological and associated ecological damage resulting from changes in flow rates, patterns and sediment movement caused by the development;	No attenuation of runoff is required as the discharge is to the tidally-dominated Red Jacket Pil.
Take account of likely future pressures on flood risk, the environment and water resources such as climate change and urban creep;	The impact of climate change on peak rainfall intensity has been explicitly considered in the design of the drainage system. There are no opportunities to increase the operational area of the Asphalt Plant and therefore urban creep has been discounted.
Use the SuDS Management Train, using drainage components in series across a site to achieve a robust surface water management system (rather than using a single “end of pipe” feature, such as a pond, to serve the whole development);	Catchpits and swale will reduce the concentration of suspended solids in the runoff from the operational area with secondary treatment provided by a Class 1 oil interceptor and secondary swale.
Maximise the delivery of benefits for amenity and biodiversity;	As part of the development an amenity space will be provided for operatives and the secondary swale provides an opportunity to enhance biodiversity.
Seek to make the best use of available land through multifunctional usage of public spaces and the public realm;	The Asphalt Plant is an industrial site with no public access.
Perform safely, reliably and effectively over the design life of the development taking into account the need for reasonable levels of maintenance;	The design has explicitly considered the maintenance of the drainage scheme by minimising below ground drainage and provision of catchpits to retain the larger factions of suspended solids.

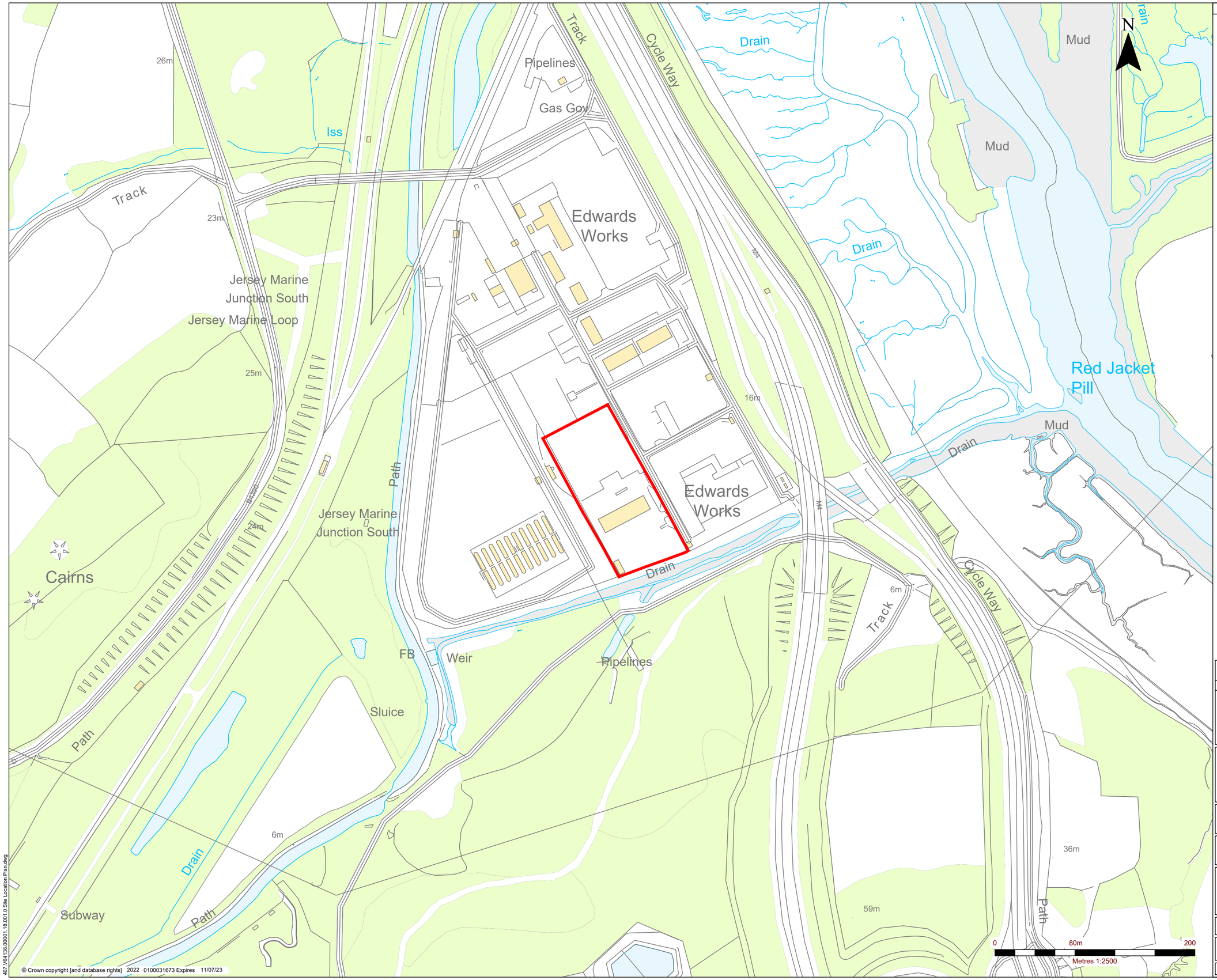
Principle	Response
Avoid the need for pumping where possible; and	No pumping is required. Through the reprofiling of the operational area, a gravity discharge to the Red Jacket Pil can be made.
Be affordable, taking into account both construction and long term maintenance costs and the additional environmental and social benefits afforded by the system.	The operator considers that the proposed drainage scheme is affordable taking into account both construction and long-term maintenance costs and the additional environmental and social benefits afforded by the system.
In addition, applications should be accompanied by proposals for a maintenance plan and the means of funding for the scheme for its design life	A Drainage Maintenance Plan is provided at Appendix 12.

6.0 CONCLUSIONS

SLR Consulting Ltd (SLR) has been retained by GDH to complete a Drainage Impact Assessment to support an application for Sustainable Drainage Approving Body (SAB) Approval – Wales for the proposed development of an Asphalt Plant and associated infrastructure at the former E M Edwards Works, Llandarcy, Skewen, Neath.

The surface water management strategy presented in this report demonstrates compliance with the six standards and the overarching principles set out in the *Statutory standards for sustainable drainage systems* that supports the Flood and Water Management Act 2010 (Schedule 3).

DRAWINGS



LEGEND

SITE LOCATION

Revision	By	Chk'd By	Date	Comments
0	TS	IW	22/07	

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FULMAR HOUSE
BEIGNON CLOSE
OCEAN WAY
CARDIFF. CF24 5PB
T: 029 2049 1010
F: 029 2048 7903
www.slrconsulting.com

Site
ASPHALT PLANT AT LLANDARCY

Project
SURFACE WATER MANAGEMENT

Drawing Title
SITE LOCATION PLAN

Scale	Date
1:2,500 @ A2	11.07.22

Drawing Number	Revision
001	0

407.V64136.00001.18.001.0 Site Location Plan.dwg

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Gas Gov
Iss
Mud
Edwards Works
23m
Jersey Marine Junction South
Jersey Marine Loop
Drain
M4
25m
16m
Mud
Drain
Path
B4290
24m
Jersey Marine Junction South
Edwards Works
M4
Drain
6m
Track
Cycle Way
FB
Weir
Pipelines
Sluice

N

LEGEND

SITE LOCATION

Elevations Table		
Minimum Elevation	Maximum Elevation	Color
0.00	2.00	
2.00	4.00	
4.00	6.00	
6.00	8.00	
8.00	10.00	
10.00	15.00	
15.00	20.00	
20.00	25.00	
25.00	30.00	
30.00	35.00	
35.00	40.00	
40.00	45.00	
45.00	50.00	
50.00	55.00	
55.00	60.00	
60.00	65.00	
65.00	70.00	
70.00	75.00	
104.00	106.00	
106.00	108.00	
108.00	110.00	

0 10 20 30 40m 60 80 100
Metres 1:1250

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407-SK41-06-00001-18.002.0 Local Topography.dwg

Revision	By	Chk'd By	Date	Comments
0	TS	IW	22/07	

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OCEAN WAY
CARDIFF. CF24 5PB
T: 029 2049 1010
F: 029 2048 7903
www.slrconsulting.com

Site
ASPHALT PLANT AT LLANDARCY

Project
SURFACE WATER MANAGEMENT

Drawing Title
LOCAL TOPOGRAPHY

Scale
1:1250 @ A1

Date
11.07.22

Drawing Number
002

Revision
0

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N

COVERED AGGREGATE BAYS

RAMP

ASPHALT PLANT FOUNDATION SLAB

EXISTING WORKSHOP BUILDING

EXISTING CAR PARK TO BE LOCALLY RE-GRADED AND RESURFACED TO FALL TO FILTER STRIP

GAS STORAGE COMPOUND

KERB

8.20
8.20
8.00
10.40
7.80
10.40
2.80
7.60
7.60
7.60
7.60
7.40
7.40
7.60
7.60
7.30
7.60
7.40
7.50
7.40
7.35
7.40
7.25
7.40
6.90
7.20
6.90
7.20
7.90
7.90

ACO S105 501

ACO S105 S1 - S30 (SLOPING DEPTH CHANNEL)

ACO S300 2400

ACO S300 2400

ACO S300 2400

ACO S300 2400

SEE DETAIL A FOR INSTALLATION OF ACO DRAIN

CATCHPIT (SEE DETAIL B)

CATCHPIT (SEE DETAIL B)

CATCHPIT (SEE DETAIL L)

EROSION PROTECTION (SEE DETAIL C)

EROSION PROTECTION (SEE DETAIL C)

FLOWGAS EMERGENCY PEDESTRIAN EGRESS ROUTE (SEE DETAIL E)

HEADWALL (SEE DETAIL F)

MANHOLE (SEE DETAIL G)

MH1
CL 7.25
IL 6.61

225mm DIA @ 1.25%

225mm DIA @ 1.25%

FILTER STRIP (SEE DETAIL K)

GIVE WAY

0 2.5 5.0 7.5 10m 15 20 25
Metres 1:250

NOTES

1) TOPOGRAPHIC LEVELS TAKEN FROM LLANDARCY 3D.DWG, G D HARRIES AND SONS LTD, LLANADARCY, TOPOGRAPHICAL SURVEY, GDHLLAN/TT/0002
2) PROPOSED LEVELS TAKEN FROM 407.V64136.00001.18.102.0 Proposed Site TC 15.03.23-A2 PRODUCED BY GERALD D HARRIES AND SONS LTD
3) THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT NPTCBC SPECIFICATION AND CONSTRUCTION PUBLICATION IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.
4) ALL SUDS COMPONENTS SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CIRIA REPORT C756 THE SUDS MANUAL AND CIRIA REPORT C768 GUIDANCE ON THE CONSTRUCTION OF SUDS

LEGEND

+7.60 PROPOSED LEVELS

SITE BOUNDARY

APPLICATION BOUNDARY

EXCESS FLOW PATH

Revision	By	Chk'd By	Date	Comments
1	AB	ILW	05/23	SCHEME REVISED TO FIT WITHIN PLANNING BOUNDARY
0	TS	IW	22/07	

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F: 029 2048 7903
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Site: ASPHALT PLANT AT LLANDARCY

Project: SURFACE WATER MANAGEMENT

Drawing Title: **DRAINAGE GENERAL ARRANGEMENT (SHEET 1 OF 2)**

Scale: 1:250 @ A1

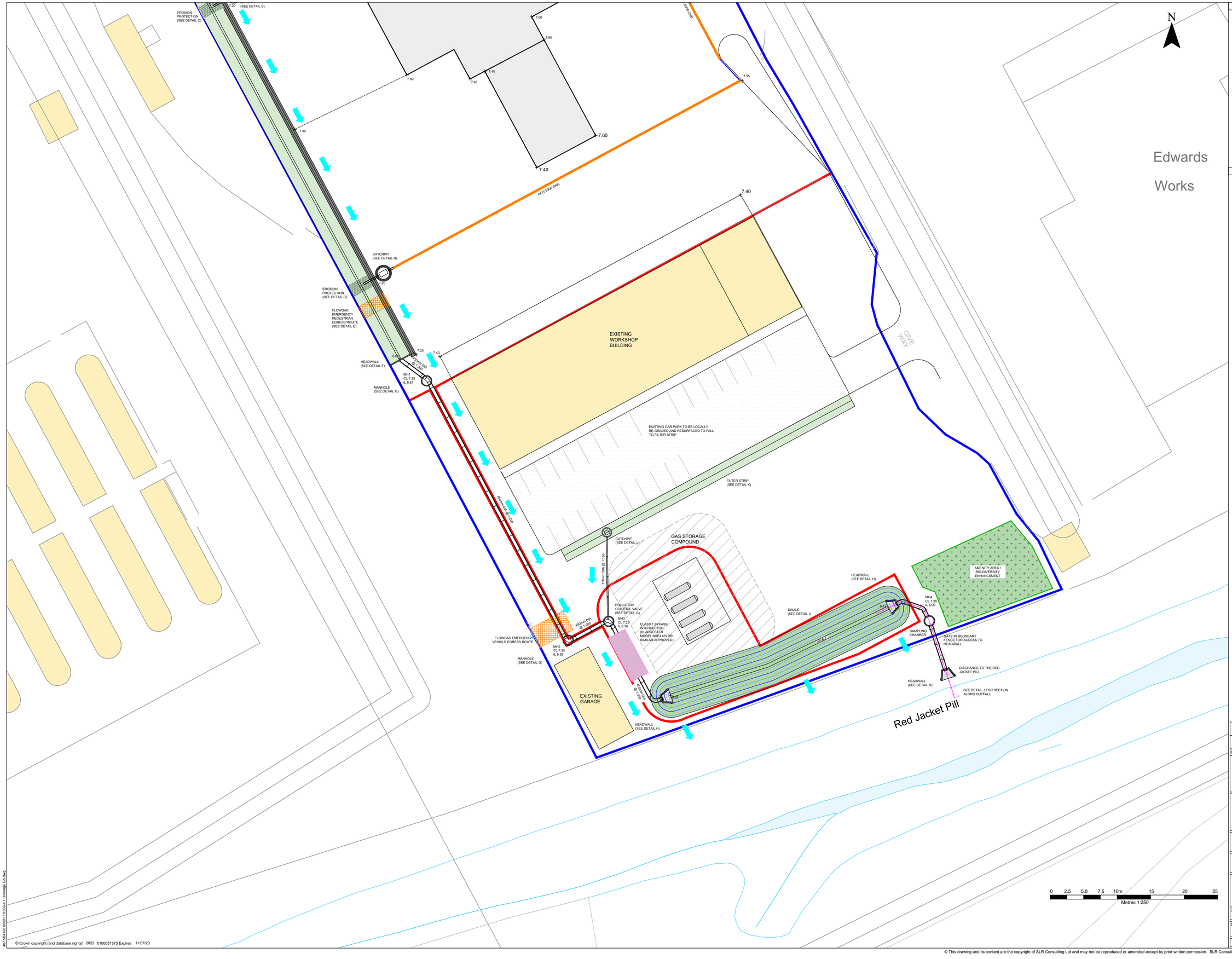
Date: 11.07.22

Drawing Number: **003**

Revision: **1**

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2) PROPOSED LEVELS TAKEN FROM 407.V64136.00001.18.102.0 Proposed Site TC 15.03.23-A2 PRODUCED BY GERALD D HARRIES AND SONS LTD
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LEGEND

- +7.60 — PROPOSED LEVELS
- SITE BOUNDARY
- PLANNING BOUNDARY
- EXCESS FLOW PATH

Revision	By	Chk'd By	Date	Comments
1	AB	ILW	05/23	SCHEME REVISED TO FIT WITHIN PLANNING BOUNDARY
0	TS	IW	22/07	

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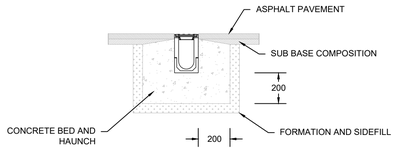
Drawing Title: **DRAINAGE GENERAL ARRANGEMENT (SHEET 2 OF 2)**

Scale	Date
1:250 @ A1	11.07.22

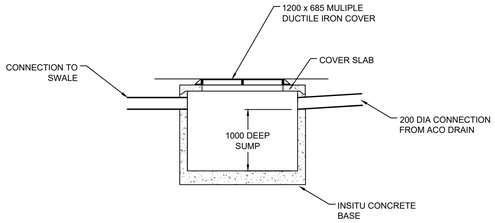
Drawing Number	Revision
004	1

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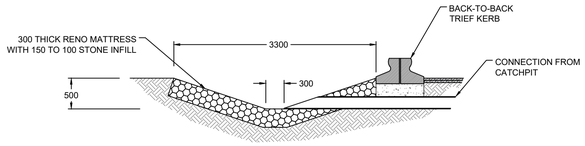
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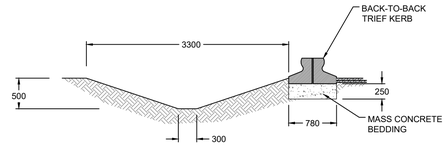
DETAIL A - ACO DRAIN INSTALLATION
SCALE 1:20



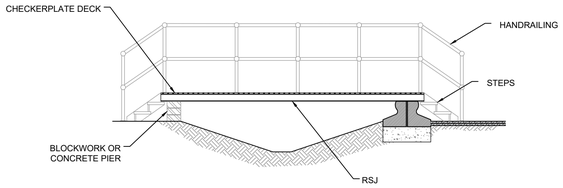
DETAIL B: CATCHPIT
SCALE 1:50



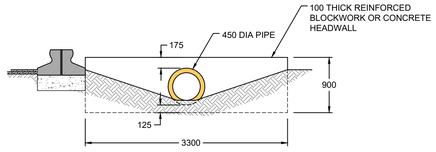
DETAIL C: ERROSION PROTECTION
SCALE 1:50



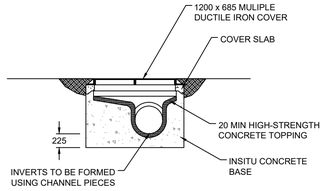
DETAIL D: SWALE & TRIEF KERB
SCALE 1:50



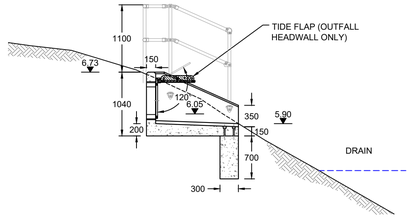
DETAIL E: FLOGAS EMERGENCY PEDESTRIAN EGRESS ROUTE
SCALE 1:50

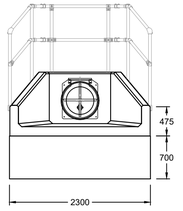


DETAIL F: HEADWALL
SCALE 1:50



DETAIL G: 1350 DIA TYPE C MANHOLE
SCALE 1:50





DETAIL H: HEADWALL
SCALE 1:50

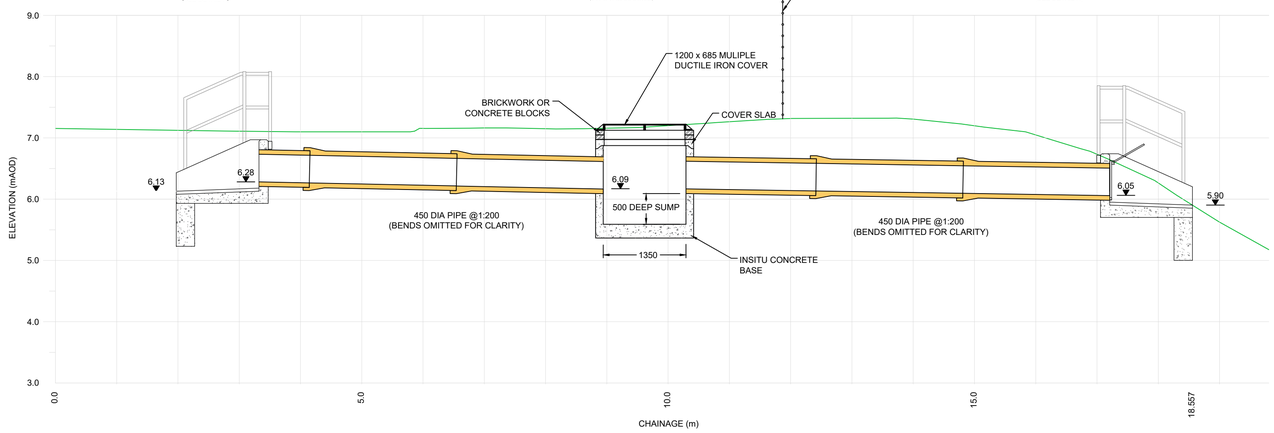


DETIAL I: SWALE
SCALE 1:50

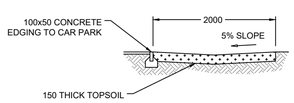
HEADWALL
(SEE DETAIL H)

SAMPLING CHAMBER
(TYPE C MANAHOLE)

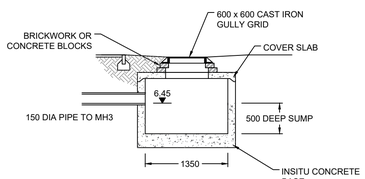
HEADWALL AND TIDE FLAP
(SEE DETAIL H)



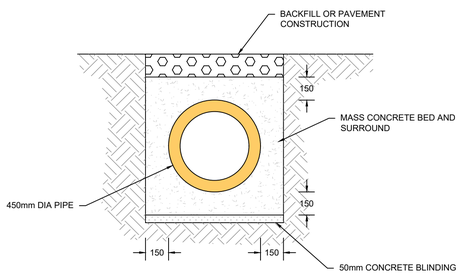
DETIAL J: OUTFALL TO RED JACKET PIL
SCALE 1:50



DETIAL K: FILTER STRIP
SCALE 1:50



DETIAL L: CATCHPIT
SCALE 1:50



DETAIL M - **450mm DIA PIPE BEDDING DETAIL**
SCALE 1:20

0 1m 1.5 2
Metres 1:20

0 1 2m 3 4 5
Metres 1:50

NOTES

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LEGEND

Revision	By	Chk'd By	Date	Comments
0	AB	IW	23/05	

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FULMAR HOUSE
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OCEAN WAY
CARDIFF. CF24 5PB
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F: 029 2048 7903
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Site: ASPHALT PLANT AT LLANDARCY

Project: SURFACE WATER MANAGEMENT

Drawing Title: **DRAINAGE DETAILS**

Scale: 1:50 (or as shown) @ A1
Date: 31 May 2023
Drawing Number: 005
Revision: 0

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APPENDIX 01

SAB response to June 2021 Pre-app

Ian Walton

From: David McClelland <petrumconsultingltd@gmail.com>
Sent: 14 March 2022 14:24
To: Ian Walton
Subject: FW: Email 5 off 5 FW: SAB Pre-Application RESPONSE for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

You don't often get email from petrumconsultingltd@gmail.com. Learn why this is important

Ian
Email 5 off 5

This provides the feedback from NPT on Suds pre-app.

Kind regards

David McClelland
Petrum Consulting Ltd
petrumconsultingltd@gmail.com
07841 367575

From: Tom Smith <Tom.Smith@jbaconsulting.com>
Date: Thursday, 22 July 2021 at 14:03
To: Justin W. Griffiths <j.griffiths4@npt.gov.uk>, Julie Burden <j.burden@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>, Nicholas Waters <n.waters1@npt.gov.uk>, David McClelland <petrumconsultingltd@gmail.com>, RichardB <richard@asbriplanning.co.uk>, Claire Eckersley <c.eckersley@npt.gov.uk>
Subject: SAB Pre-Application RESPONSE for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Hi Justin

Thank you for getting back so quickly and confirming on those points. I will revert back to the client and I'm sure we'll speak again soon.

Thanks again
Tom

Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Sent: 22 July 2021 12:58
To: Tom Smith <Tom.Smith@jbaconsulting.com>; Julie Burden <j.burden@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>; Claire Eckersley <c.eckersley@npt.gov.uk>
Subject: RE: SAB Pre-Application RESPONSE for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Hi Tom my responses are below in red, hope this helps – many thanks

Cofion cynnes / Kind regards

Justin W. Griffiths
BSc(Hons), MSc, FCABE, C.Build E, FIHE MCIOB.

SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot

Tel/Ffôn: 01639 686397
Email / E-bost: j.griffiths4@npt.gov.uk

The Quays, Brunel Way, Neath SA11 2GG
Y Ceiau, Ffordd Brunel, Castell-nedd, SA11 2GG

We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.
Croesewir gohebiaeth yn y Gymraeg a byddwn yn ymdrin â gohebiaeth Gymraeg a Saesneg i'r un safonau ac amserlenni

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sylwer nad oes unrhyw sicrwydd nad yw'r e-bost hwn neu unrhyw ymgysylltiad yn rhydd o firws ac nad yw chwaith wedi'i ryng-gipio na'i newid.

From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 22 July 2021 12:19
To: Justin W. Griffiths <j.griffiths4@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>; Claire Eckersley <c.eckersley@npt.gov.uk>
Subject: SAB Pre-Application RESPONSE for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Good Afternoon Justin

Thank you for your response and confirming that the client can progress the development to FULL SAB Application.

Having read though your comments they are very informative and will form the basis for the Detailed Design works. However, to ensure my understanding is correct, before proceeding with Detailed Design I wonder if you could provide a little further clarification on a couple of points mentioned in your email:

- . NPTBC are happy with the 20/25 year tide lock scenarios modelled within the strategy however, would like 30% climate change allowance applied to peak rainfall intensity for Detailed Design rather than the 20% used within the initial MicroDrainage calculations. Please can you confirm that this understanding is correct; Yes that's correct
- . In order to propose discharge to Red Jacket Pill Ordinary Watercourse Consent will be required. We assume that only a temporary Ordinary Watercourse Consent will be required given the proposed works. Please can you confirm that this is correct and whether any other drainage related consents will be required to support the Full SAB application? If it's a new structure (head wall being constructed then permanent consent would only be required and not temporary.

I look forward to hearing from you.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Sent: 21 July 2021 12:07
To: Tom Smith <Tom.Smith@jbaconsulting.com>; Julie Burden <j.burden@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>; Claire Eckersley <c.eckersley@npt.gov.uk>

Subject: RE: SAB Pre-Application RESPONSE for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY
Importance: High

Good morning Tom

Apologise for the delay in responding to you on your recent SAB prelim application.

I pleased to provide you with observations based upon the detail you have submitted via a Preliminary SAB application, and they are as follows:-

1. DCWW offer no objection due to the fact that none of the surface water is proposed to be discharged in to their asset.
2. **STANDARD 1** - You justified the priority level 3 is to be used and we agree.
3. **STANDARD 2** – noted that the discharge will into a watercourse which is dictated by the tidal events therefore agree that no attenuation is required. To allows a connection in a watercourse you must apply for OWC application to allow for the connection and discharge which is compliant with s23 of the Land Drainage Act 1991.we also provide this consent within our section of the authority. The influence of tide locking on the outfall has been modelled for a life expectancy of the development of 75 years (2096) with no site flooding indicated for 1:100. A non-return valve is proposed for the outfall. Further information will be available in detailed design (for full app), but the principles seem ok for this pre app. Further construction details are required as part of the SAB approval. Climate change proposed is 20% we recommend 30% CC.
4. **STANDARD 3** - All SuDS components are proposed to be lined to prevent any mobilisation of contaminants and management trail for pollution mitigations are proposed. Agreed. Further construction details are required as part of the SAB approval.
5. **STANDARD 4** – Approved in principle.
6. **STANDARD 5** – Agreed in principle (see attached Biodiversity observations). Details of planting and any ecological enhancements are required for approval.
7. **STANDARD 6** – A schedule is required stating the yearly management and maintenance of all SuDS components

In principle we have no SAB objection to your surface water strategy proposal, subject to detailed construction cross sections, and engineering details of all SuDS components, together with responses listed above being submitted to and approved. Therefore, we wish to invite you to submit a FULL SAB Application and payment thereof.

During the FULL application process we shall agree the amount of SAB inspections required for this scheme.

I trust that the above is of assistance and should you wish to have a meeting on teams or site to discuss the FULL application prior to submission or during consultation please let us know.

Kind Regards & Best wishes

Cofion cynnes / Kind regards

Justin W. Griffiths

BSc(Hons), MSc, FCABE, C.Build E, FIHE MCIOB.

SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot

Tel/Ffôn: 01639 686397
Email / E-bost: j.griffiths4@npt.gov.uk

The Quays, Brunel Way, Neath SA11 2GG

Y Ceiau, Ffordd Brunel, Castell-nedd, SA11 2GG

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From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 12 July 2021 09:37
To: Julie Burden <j.burden@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>; Claire Eckersley <c.eckersley@npt.gov.uk>; Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Good Morning Julie

Thank you for confirming receipt.

Can you provide an indication of how long it will likely take to receive the responses from our internal consultees? A rough estimate would be much appreciated so that I can keep my client informed.

Thank you in advance
Tom

Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW

t: 01444 473652



From: Julie Burden <j.burden@npt.gov.uk>
Sent: 12 July 2021 09:30
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>; Claire Eckersley <c.eckersley@npt.gov.uk>; Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Morning Tom

Just to confirm that we have received the documentation and are currently awaiting responses from our internal consultees.

We will be in touch shortly.

Kind regards

Julie

From: Claire Eckersley <c.eckersley@npt.gov.uk>
Sent: 09 July 2021 08:04
To: 'Tom Smith' <Tom.Smith@jbaconsulting.com>; Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Morning Tom

When I was in the office yesterday I did try and look for the folder we have for your application but was unable to find it. I will speak with Julie when she returns from leave on Monday as she will know whether she has received the hard copy and I will let you know.

Sorry for not being able to let you know sooner.

Many thanks

Claire Eckersley

SAB & Highway Development Technician/SAB a Thechnegydd Datblygu Priffyrdd

Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot Tel/ Ffôn: 01639 686393

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From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 07 July 2021 12:10
To: Claire Eckersley <c.eckersley@npt.gov.uk>; Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Hi Claire and Justin

Thank you for your emails and getting back so quickly.

Claire - That would be much appreciated, thank you in advance.

With regards to receiving a Pre-App response, what sort of timescales are we currently looking at?

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Claire Eckersley <c.eckersley@npt.gov.uk>
Sent: 07 July 2021 11:53
To: Justin W. Griffiths <j.griffiths4@npt.gov.uk>; Tom Smith <Tom.Smith@jbaconsulting.com>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters

<n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Hi Tom

Thank you for your email.

I will double check when I attend the office tomorrow afternoon, but looking at our system it does look like the application was validated on 17/6/21 supporting that we have received the hard copies on this date. I will double check tomorrow though ☺

Many thanks

Claire Eckersley

SAB & Highway Development Technician/SAB a Thechnegydd Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot Tel/ Ffôn: 01639 686393

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From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Sent: 07 July 2021 11:42
To: 'Tom Smith' <Tom.Smith@jbaconsulting.com>; Claire Eckersley <c.eckersley@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY
Importance: High

Hi Tom, Yes I am keeping well thank you.

Hope you too?

Unfortunately I have not been in the office myself for over a week as I am working from home, however I will ask my colleagues to check when they have been received and are in the office.

Morning Claire, I understand that you will going into the office tomorrow, would you be so kind as to check that we have received the documents relating to the above development please, and could you confirm receipt as well please. Thanks

Cofion cynnes / Kind regards

Justin W. Griffiths

BSc(Hons), MSc, FCABE, C.Build E, FIHE MCIOB.

SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot

Tel/Ffôn: 01639 686397
Email / E-bost: j.griffiths4@npt.gov.uk

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Y Ceiau, Ffordd Brunel, Castell-nedd, SA11 2GG

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From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 07 July 2021 10:16
To: Justin W. Griffiths <j.griffiths4@npt.gov.uk>

Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>; David McClelland <petrumconsultingltd@gmail.com>; RichardB <richard@asbriplanning.co.uk>
Subject: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Good Morning Justin

I hope you have been keeping well.

I wanted to make sure you had received the required documents for Pre-App Consultation ok the other week. I sent them off via recorded delivery and it appears that they arrived at your office on 16th June – please can you confirm you have received them.

I also wanted to take this opportunity to ask what the likely Pre-App response date will be so that I can keep my client informed.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Sent: 14 June 2021 14:29
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Great Thank you Tom

Cofion cynnes / Kind regards

Justin W. Griffiths

BSc(Hons), MSc, FCABE, C.Build E, FIHE MCIOB.

SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot

Tel/Ffôn: 01639 686397
Email / E-bost: j.griffiths4@npt.gov.uk

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From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 14 June 2021 14:26
To: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>
Subject: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Hi Justin

Thanks for taking my call just now - it was good to speak with you.

As mentioned, I have come into the office today so will print the documents out and get them sent across before the end of the week. The contents will include black and white versions of the surface water drainage strategy and SAB Pre-App form along with colour printouts of the proposed site plan and proposed SuDS layout plan (so that the key and details are a little more visible).

Once reviewed, if you need anything further please do not hesitate to get in touch.

Kind regards
Tom
Tom Smith

Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



COVID-19. JBA has remained open for business throughout the Coronavirus pandemic. However, by adopting more flexible working I may not always be available in the office.

From: Justin W. Griffiths <j.griffiths4@npt.gov.uk>
Sent: 11 June 2021 14:16
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Cc: Delyth A. Thomas <d.a.thomas@npt.gov.uk>; Julie Burden <j.burden@npt.gov.uk>; Nicholas Waters <n.waters1@npt.gov.uk>
Subject: RE: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Afternoon Tom

Thank you for your email below.

Yes working from home has changed the way in which we are dealing with SAB applications and we are supportive of going digital in respect of assessing such applications going forward.

However, notwithstanding the requirement for hard copies with our standard SAB applications (3 x no of copies). I/we only now require 1 hard copy of all SAB documents so that insert them into our file and also use the approved details when inspections take place on site.

Therefore, I would kindly request that you submit the one hard copy of all documents as previously requested.

Cofion cynnes / Kind regards

Justin W. Griffiths

BSc(Hons), MSc, FCABE, C.Build E, FIHE MCIOB.

SAB & Highway Development Control Manager/ SAB a Rheolwr Rheoli Datblygu Priffyrdd
Neath Port Talbot County Borough Council/ Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot

Tel/Ffôn: 01639 686397
Email / E-bost: j.griffiths4@npt.gov.uk

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From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 11 June 2021 11:45
To: Julie Burden <j.burden@npt.gov.uk>
Subject: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Good Morning Julie

Thank you for confirming receipt of the SAB Pre-App enquiry.

I just tried to call the office but the phone is diverting to answer machine. This is the first time hard copies have been requested when submitting information to a Local Authority. Given the size of the reports, the level of detail contained within the plans and the fact that the majority of people are working from home we would question why hard copies are required.

We are an environmental company and aim to reduce the amount of printed material/our environmental impact where possible. Therefore we would appreciate it if the SAB could review the electronic documents provided, negating the requirement to print several hundred pages.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



COVID-19. JBA has remained open for business throughout the Coronavirus pandemic. However, by adopting more flexible working I may not always be available in the office.

From: Julie Burden <j.burden@npt.gov.uk>
Sent: 11 June 2021 09:38
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Subject: FW: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Dear Tom

Many thanks for the SAB Pre-application and payment.

To enable us to validate the application, if you have not already done so, please could you send 1 x hard copies of all documentation to:-

SAB & HDC, FAO Julie Burden, NPTCBC, The Quays, Brunel Way, Briton Ferry, SA11 2GG.

Kind Regards

SAB & Highway Development Control

From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 10 June 2021 16:37
To: HDC <hdc@npt.gov.uk>
Cc: David McClelland <petrumconsultingltd@gmail.com>; emma@asbriplanning.co.uk; RichardB <richard@asbriplanning.co.uk>; Clare Burnell <Clare.Burnell@jbaconsulting.com>
Subject: SAB Pre-Application Advice for development of an Asphalt Plant at Llandarcy, Skewen, Neath Port Talbot SA10 6JY

Good Afternoon

I would like to submit the attached documents for SAB Pre-Application Advice. The proposals relate to development of an asphalt plant in Llandarcy. JBA have completed a surface water drainage strategy for the scheme and would welcome your comment.

Also, attached is the receipt to show that payment has been made for this service.

If you require any additional information please do not hesitate to get in touch. I look forward to receiving your response.

Kind regards
Tom

Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652

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We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.

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If you would like to use Welsh when dealing with the Council please click here

Os hoffech ddefnyddio'r Gymraeg wrth ddelio â'r Cyngor os gwelwch yn dda cliciwch yma

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APPENDIX 02

SAB response to July 2022 Pre-app

Cyngor Castell-nedd Port Talbot
Neath Port Talbot Council

NEATH PORT TALBOT COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL CASTELL-NEDD PORT TALBOT

FLOOD AND WATER MANAGEMENT ACT 2010
THE SUSTAINABLE DRAINAGE (APPROVAL AND ADOPTION PROCEDURE) (WALES) REGULATIONS 2018
THE SUSTAINABLE DRAINAGE (APPROVAL AND ADOPTION) (WALES) ORDER 2018

SAB Pre-Application Feedback

Name and address of the applicant	**Name and address of the agent**
Nick Cleary Gerald D Harris & Sons Ltd Rowlands View Templeton Narberth SA67 8RG	Ian Walton SLR Consulting Ltd Ground Floor Helmont House Cardiff CF10 2HE

DATE REGISTERED	**14.07.2022**
ENGINEER NAME & NO.	**Delyth Thomas 01639 6864004**
APPLICATION NO.	**SP202/00012**
LOCATION	**Old Gas Works, B4290 From Llandarcy To Jersey Marine, Llandarcy, Neath, Neath Port Talbot, SA10 6JY**
PROPOSAL	**Development of an asphalt plant, asphalt storage area and LPG storage compound**

Following the assessment of your pre-application resubmission for your proposed development of an Asphalt Plant and storage area at Old Gas Works, Llandarcy. The general design principles are found to be acceptable. However, we have the following observations:

Cyngor Castell-nedd Port Talbot
Neath Port Talbot Council

Standard 1 – Surface water runoff destination
The destination proposed is acceptable to the SAB

Standard 2 – Surface water runoff hydraulic control
Your drainage strategy refers to surface water exceedance from the site, however a surface water exceedance routes drawing has not been provided.

Your previous drainage submission included the drainage catchment of the car park, could you please provide drainage details for how the existing hard surfaces within the redline site boundary drain that do not form part of the SAB.

There has been limited drawings detailing the individual drainage components submitted at this stage in the application, the applicant is reminded that full detailed construction methods must be submitted for approval with all submitted detailed design to accompany this application to be site specific and relevant to the application itself, for example swale drawings must be to scale with cross sections, long sections and planting schedules, manhole and catch pits types and sizes, hydrobrake detail and so on all need to be submitted and cannot be conditioned at the full application stage.

Could you please ensure the following note is referenced on all of the drawings submitted. 'All SuDS components should be designed and constructed in accordance with CIRIA Report C756 The SuDS Manual and CIRIA Report C768 Guidance on the Construction of SuDS

Detailed drawings showing how the 'Emergency pedestrian route' relates to the drainage channel will need to be submitted.

The proposed swale detail does not comply, you are proposing the sides of the swale to have a 1:2 gradient however a 1:3 gradient would be the limit as this allows ease of access for maintenance purposes in accordance with CIRIA 753

Standard 3 – Water quality
Please undertake the Simple Index Approach assessment for your chosen drainage methods and submit for appraisal by the SAB.

www.npt.gov.uk

Amgylchedd ac Adfywio
David W Griffiths Pennaeth Peirianneg a Chludiant
Y Ceiau, Ffordd Brunel, Parc Ynni Baglan, Castell-nedd, SA11 2GG
Ffôn 01639 686868 Ffacs 01639 686100

Environment & Regeneration
David W Griffiths Head of Engineering & Transport
The Quays, Brunel Way, Baglan Energy Park, Neath, SA11 2GG
Phone 01639 686868 Fax 01639 686100

Croesewir gohebiaeth yn y Gymraeg a byddwn yn ymdrin â gohebiaeth Gymraeg a Saesneg i'r un safonau ac amserlenni.
We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.

There is a concrete filter drain/conveyance channel proposed along the boundary of the site to capture water from the asphalt working yard, why has this been proposed over the use of a planted swale? The conveyance channel proposed offers no water quality or ecological benefit to the scheme.

Standard 4 – Amenity

We acknowledge that the proposed drainage scheme which includes the provision of a swale, that offers limited amenity benefit the development.

Standard 5 - Biodiversity

You are advised that any planting installed including swales should be mature planting and not a seeded mix unless these features are installed prior to the commencement of any work thus allowing time for the seeds to grow into fully functioning plants and operational once the building is complete. A Construction program of Works will help us determine the planting types proposed which we have requested under Standard 6.

You will need to provide the species list proposed for all proposed planting areas for approval. There is an approved list of native planting that can be obtained from the SAB.

Standard 6 - Design of Drainage for Construction, Operation & Maintenance

An inspection regime will need to be agreed in advance with the SAB and will form part of the approval notice along with a Construction Program of Works and a Construction and Environmental Method Statement for the development which should include; the construction process to protect the SuDS functionality, protection of adjoining land during the course of construction, landscaping planting and consideration for access for inspections by the approving body

A detailed management and maintenance plan for each drainage feature will need to be submitted for approval, this document shall include the contact details for the person/company who responsibility over implementing and monitoring this document.

These observations are provided without prejudice and are based upon the information submitted. Our observations may change to reflect these amendments and/or additional details.

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Amgylchedd ac Adfywio
David W Griffiths Pennaeth Peirianneg a Chludiant
Y Ceiau, Ffordd Brunel, Parc Ynni Baglan, Castell-nedd, SA11 2GG
Ffôn 01639 686868 Ffacs 01639 686100

Environment & Regeneration
David W Griffiths Head of Engineering & Transport
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Phone 01639 686868 Fax 01639 686100

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We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.

Cyngor Castell-nedd Port Talbot
Neath Port Talbot Council

Signed : BA Thomas

pp Head of Engineering and Transport

Date: 24/08/2022

www.npt.gov.uk

Amgylchedd ac Adfywio

David W Griffiths Pennaeth Peirianneg a Chludiant
Y Ceiau, Ffordd Brunel, Parc Ynni Baglan, Castell-nedd, SA11 2GG
Ffôn 01639 686868 Ffacs 01639 686100

Environment & Regeneration

David W Griffiths Head of Engineering & Transport
The Quays, Brunel Way, Baglan Energy Park, Neath, SA11 2GG
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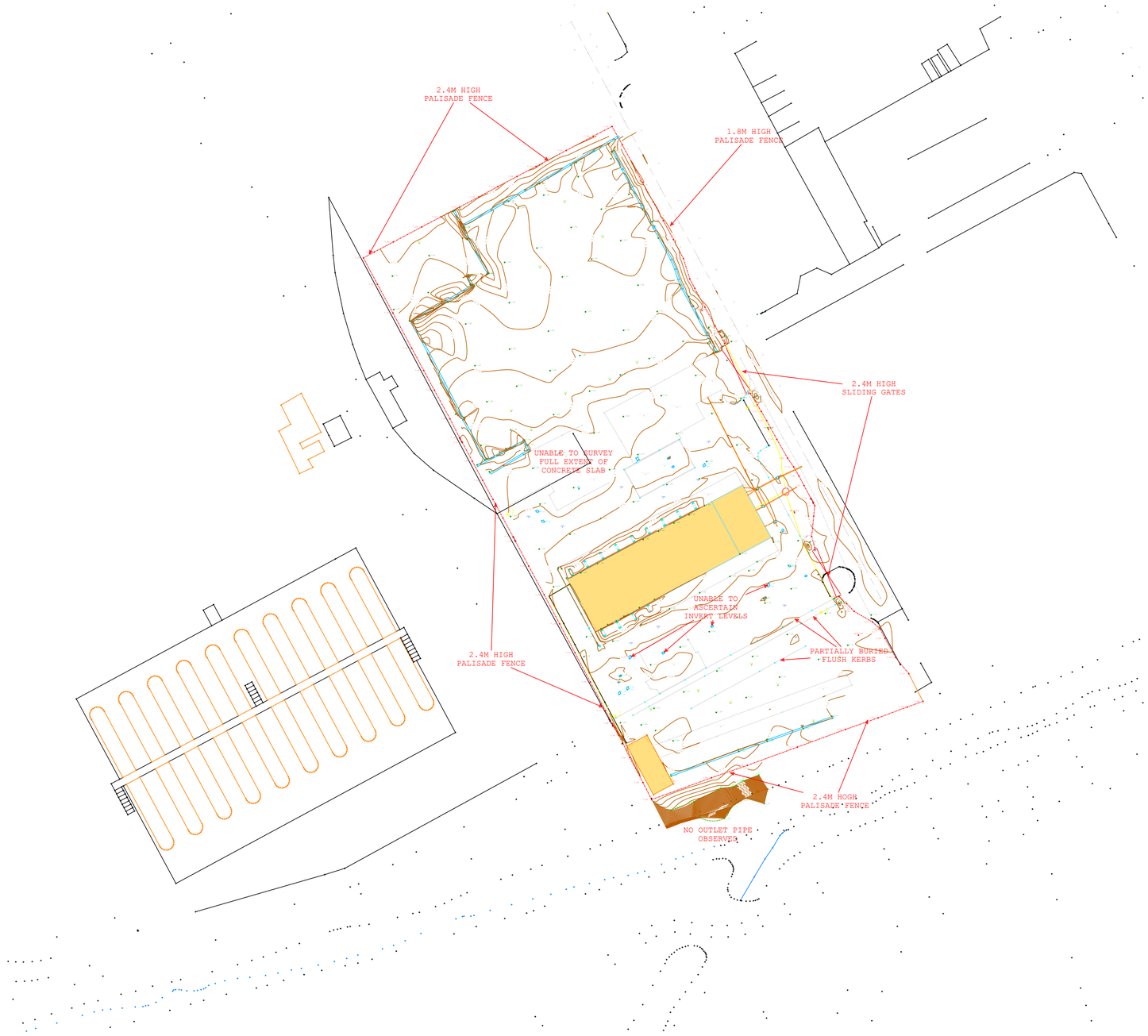
Notes:

Welsh Water has a key role to play in the development and planning process as the services provided are at the forefront of public health and protection of the environment. Welsh Water encourages all developers to engage with them as early as possible in order to address any issues that may arise during the planning/construction process

Upon receipt of a pre-application enquiry, Welsh Water will provide a written response advising whether the local network(s) can support the proposal, whether off-site water mains and/or sewers will need to be provided, and whether there are any apparatus located within the land you wish to develop and the requirements for these apparatus. This service is provided for a fee of £90 and can be submitted by post or by completing the online enquiry form at http://www.dwrcymru.com/en/Developer-Services. Further information can be obtained from the dedicated team of planning officers at Welsh Water on 0800 917 2652.

APPENDIX 03

Topographic Survey



General Notes

No.	Revision/Issue	Date

Firm Name and Address

G.D. Harries and Sons Ltd

Project Name and Address

G D HARRIES AND SONS LTD
LLANDARCY SITE
TOPOGRAPHICAL SURVEY

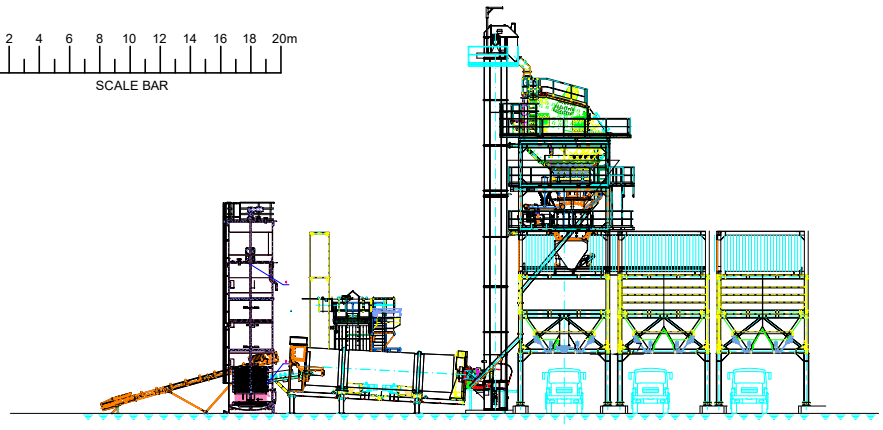
Project	GDH/LLAN/TT/0003
Date	11.05.2022
Scale	NTS
Sheet	0003

APPENDIX 04

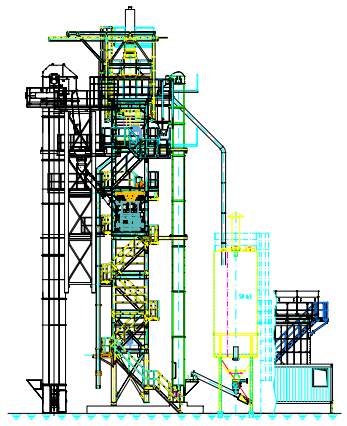
Site development plan

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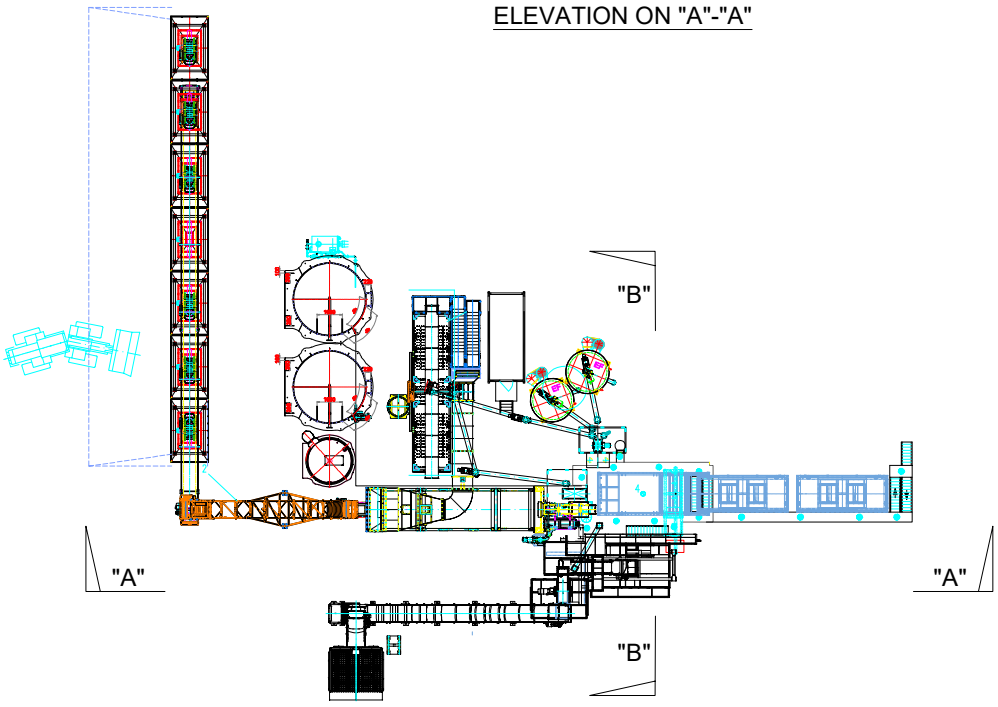
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SCALE BAR



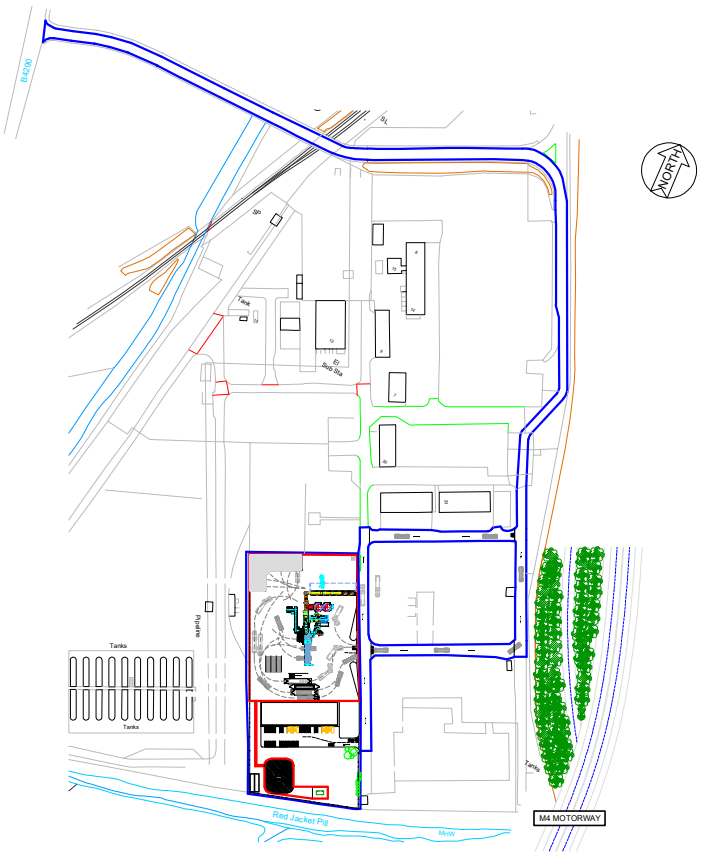
ELEVATION ON "A"-"A"



ELEVATION ON "B"-"B"

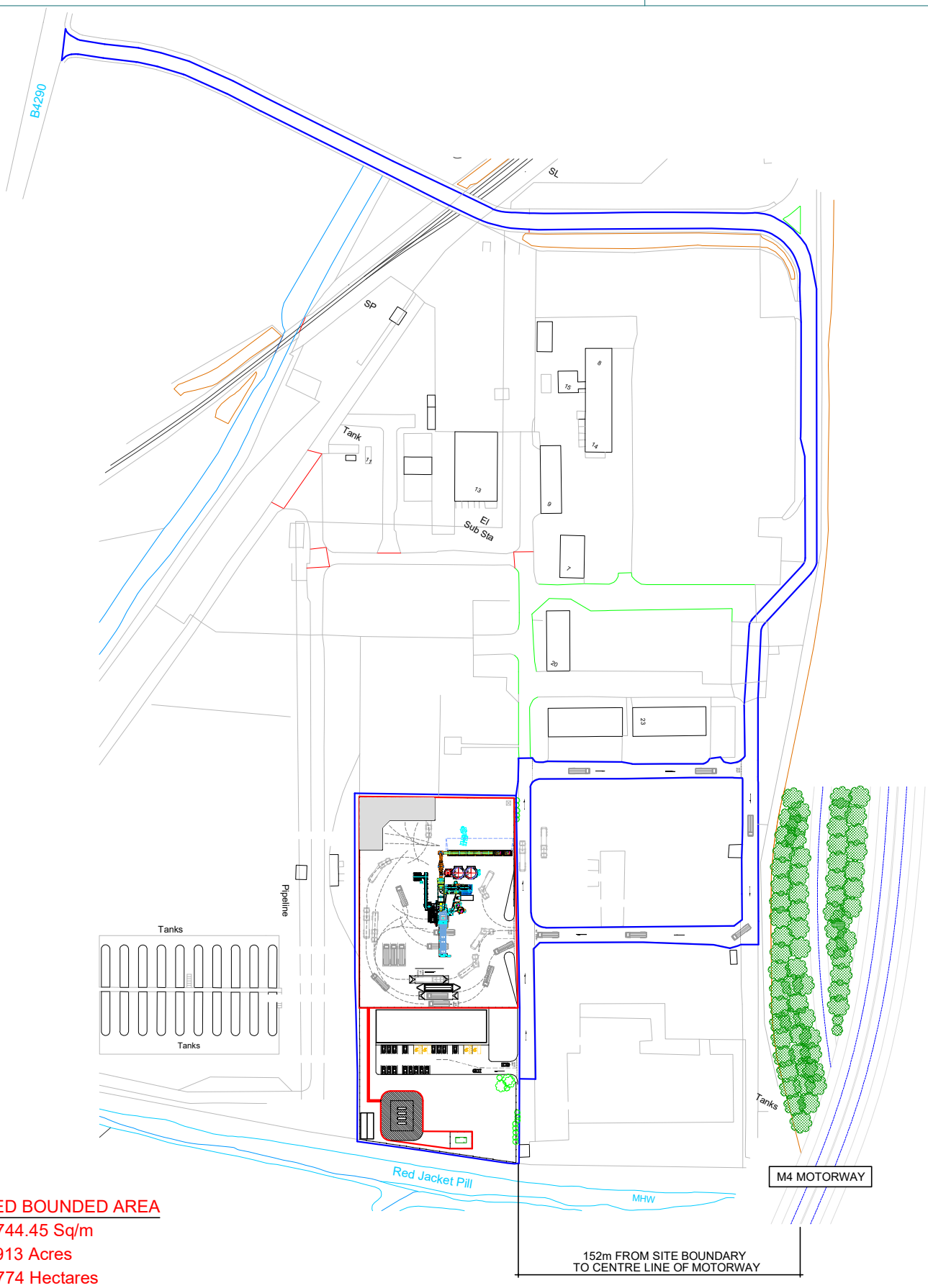


ASPHALT PLANT - PLAN VIEW & ELEVATIONS (ONLY)



PLAN VIEW OF DEVELOPMENT SITE

0 20 40 60 40 100 120 140 160 180 200m
10
SCALE BAR



0 10 20 30 40 50 60 70 80 90 100m
5
SCALE BAR

RED BOUNDED AREA
7,744.45 Sq/m
1.913 Acres
0.774 Hectares

PLAN VIEW OF DEVELOPMENT SITE

ISSUE	DATE	REVISION	DRN BY	APP'D BY

MW Engineering Solutions Ltd
Tel: +44 (0) 7703 193107
Web: www.mwengineeringsolutions.co.uk

PROJECT:
PROPOSED ASPHALT PLANT FACILITY
(LLANDARCY)

CLIENT:
GERALD D. HARRIES

DRAWING TITLE:
SITE DEVELOPMENT DRAWING

ORIGINATOR: MW	DATE: 14.03.22	SIG:
CHECKED: MW	DATE: 14.03.22	SIG:

MWES DRAWING No.:
GDH - LLANDARCY - SITE DEVELOPMENT DRAWING

CLIENT DRAWING No:		SHEET SIZE
N/A		A1
REVISION:	SCALE: AS INDICATED	SHEET No. 1 OF ***

APPENDIX 05

Flood Consequences Assessment

Proposed Asphalt Plant Facility Flood Consequence Assessment

Draft Report

January 2021

www.jbaconsulting.com

Gerald D Harries and Sons Ltd
Rowlands View
Templeton
Narberth
Pembrokeshire
SA67 8RG

JBA Project Manager

Tom Smith
JBA Consulting
35 Perrymount Road
Haywards Heath
RH16 3BW

Revision History

Revision Ref/Date	Amendments	Issued to
January 2021	Draft Report	David McClelland (SigmaRoc PLC)

Contract

This report describes work commissioned by Richard Bowen of Asbri Planning Ltd, on behalf of SigmaRoc PLC, by an email dated 26th November 2020. Hannah Booth of JBA Consulting carried out this work.

Prepared by ..... Hannah Booth BSc (Hons)

Flood Risk Analyst

Reviewed by ..... Tom Smith BSc (Hons) PIEMA

..... Flood Risk Analyst

..... George Baker BEng AIEMA CEnv IEng MCIWEM C.WEM

Associate Director

Purpose

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1 Introduction

1.1 Terms of reference

JBA Consulting were commissioned by Richard Bowen of Asbri Planning Ltd, on behalf of SigmaRoc PLC, in November 2020 to prepare a Level 1 Flood Consequence Assessment (FCA) in support of a proposed planning application at the former Edwards Works, Llandarcy. This FCA demonstrates the suitability of the proposed development and describes flood mitigation recommended to manage flood risk at the site.

1.2 FCA requirements

This FCA follows Welsh Government guidance on development and flood risk set out in the Technical Advice Note 15: Development and Flood Risk (TAN15). Where appropriate the following aspects of flood risk will be addressed in all planning applications over its expected lifetime in flood risk areas:

- The likely mechanisms of flooding
- The likely source of flooding
- The depths of flooding through the site
- The speed of inundation of the site
- The rate of rise of flood water through the site
- Velocities of floodwater across the site
- Overland flow routes
- The effect of access and egress and infrastructure, for example public sewer outfalls, combined sewer outflows, surface water sewers and effluent discharge pipes from wastewater treatment works
- The impacts of the development in terms of flood risk on neighbouring properties and elsewhere on the floodplain

2 Site description

The site is located at the Former Edwards Works, off the B4290 and is approximately 125m west of the M4 Motorway in the Llandarcy area of Neath. The site is approximately 0.78 hectares in size and forms part of a wider industrial estate. The red outline application boundary is brownfield in nature and considered to be predominantly underlain by hardstanding. Sole access to the site is via a lane off the B4290 330m north west of the site.

Table 2-1 Site summary

Site name	Former Edwards Works
Site area	0.78 Hectares
Existing land use	Industrial
Purpose of development	Industrial
OS NGR	SS725948
Local Planning Authorities	Neath Port Talbot Council
Lead Local Flood Authority	Neath Port Talbot Council

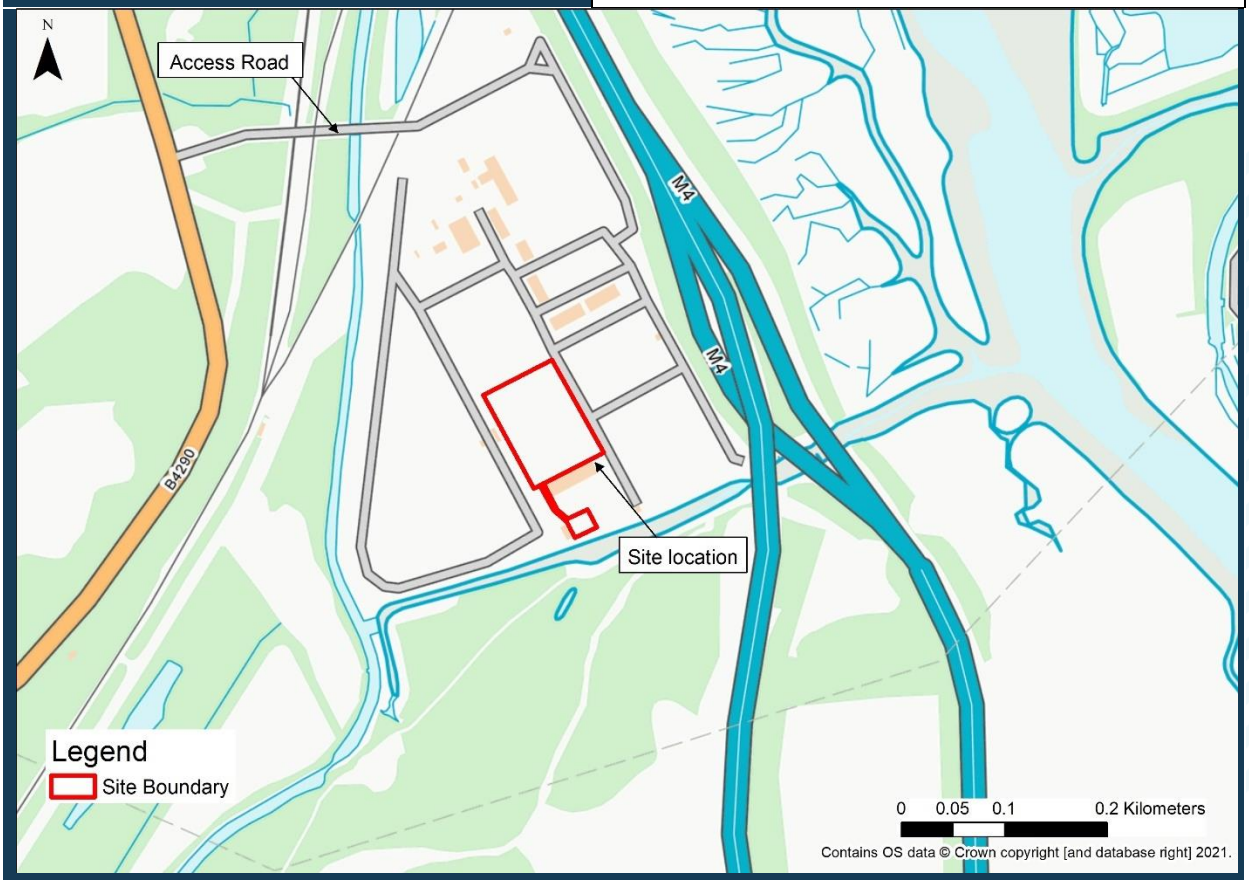


Figure 2-1 Proposed development site

2.1 Existing land use and site topography

Aerial images from Google Earth indicate that the site is currently used for ancillary industrial purposes such as storage and is predominantly vacant (as shown in Figure 2-2).



Figure 2-2 Aerial imagery of the site from Google Earth (Source: Google Earth 2021)

Natural Resources Wales' (NRW) Open Source 1m Light Detection and Ranging (LiDAR) data[1] has been used to analyse existing ground levels across the site and within the surrounding area (shown in Figure 2-3). NRW LiDAR data demonstrates that the site is generally flat with ground levels ranging from 7.0mAOD along the western edge, to approximately 7.2mAOD towards the east of the site. The elevation of the access road along the eastern boundary of the site ranges between 7.2m and 7.3mAOD. The bridge across the railway and canal, at the industrial estate entrance, is not represented within the LiDAR outputs however, review of Google Street view indicates that bridge is at the same level as the access road, approximately 14.8m AOD.

1 LLe Geoportal for Wales: http://lle.gov.wales/catalogue/item/LidarCompositeDataset/?lang=en

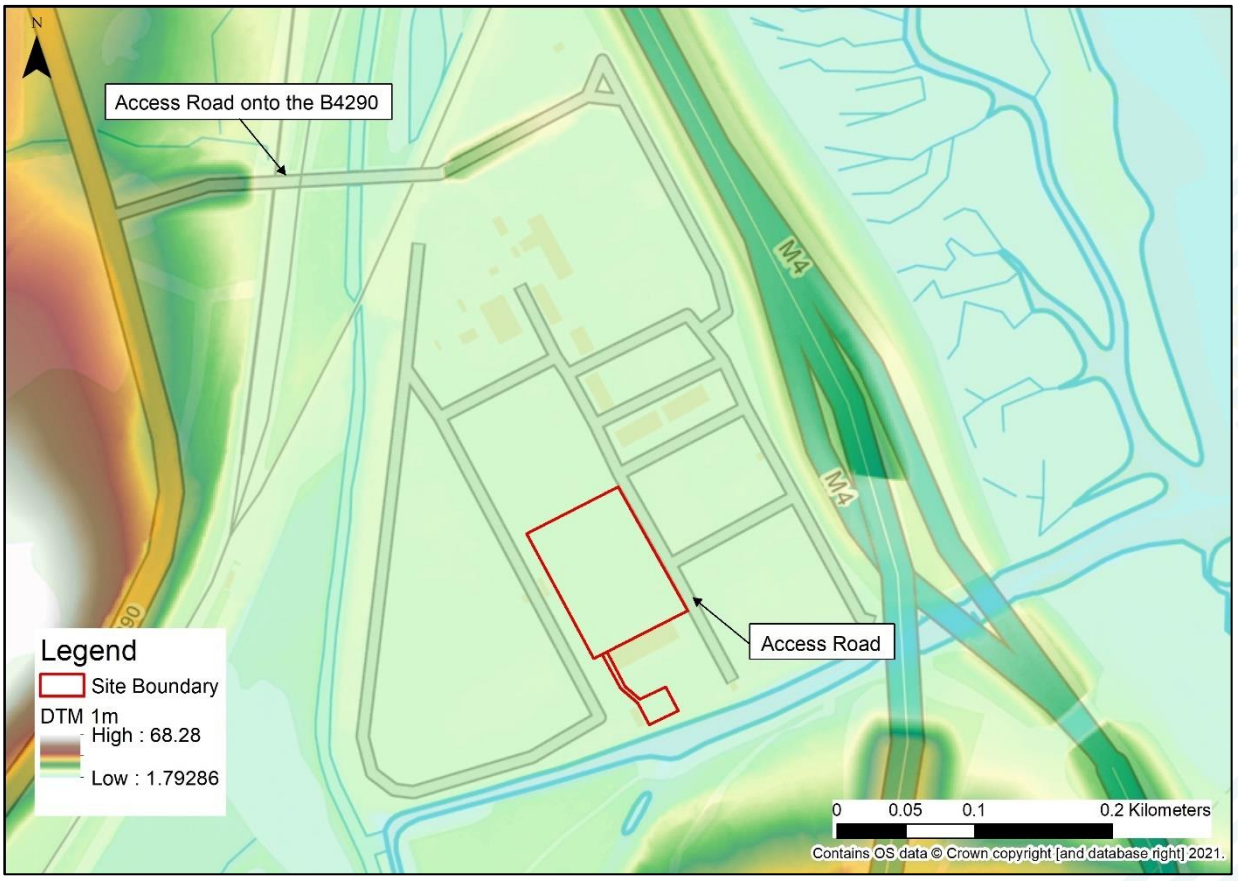


Figure 2-3 LiDAR Topographic data from NRW (1m resolution)

2.2 Soils, geology and watercourses

Cranfield University Soilscapes[2] describes the underlying strata as loamy and clayey floodplain soils with naturally high groundwater. Soils are reported to drain to local groundwater before feeding into the river.

According to the British Geological Survey (BGS) Geology of Britain Viewer3, bedrock at the site is described as Brithdir Member comprised of Sandstone. The superficial deposits are identified as being Tidal Flat Deposits comprised of clay, silt and sand.

Three watercourses are in close proximity to the site, as shown in Figure 2-4. The site is located approximately 390m from the western bank of the tidal River Neath and 200m to the east of the Tennant Canal. A third, tidal channel is located 75m south of the site and is named Red Jacket Pill. This watercourse passes below the M4 Motorway and discharges into the River Neath.

2 Cranfield University Soilscapes: http://www.landis.org.uk/soilscapes/
3 BGS Geology of Britain Viewer: http://mapapps.bgs.ac.uk/geologyofbritain/home.html?

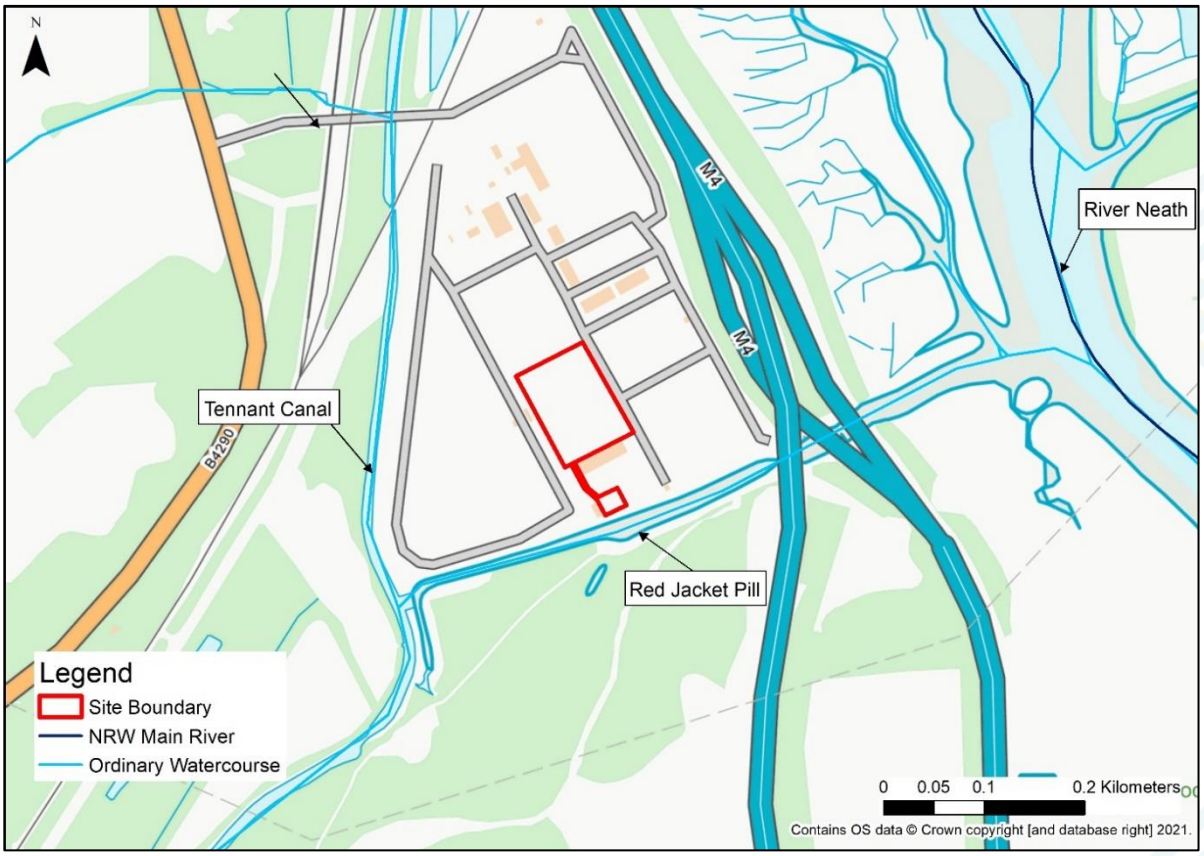


Figure 2-4 Watercourses around the site

2.3 Development proposal

The proposal is for development of a new asphalt plant which would be used to serve local contracting companies and provide material to Gerald D Harries & Sons Ltd (GDH) own asphalt contracting division.

The proposed installation is comprised of a number of elements including:

- Cold Feed Hoppers;
- Dryer Drum;
- Mixing Tower;
- Skip system;
- Finished product storage silos;
- Bitumen Storage Tanks;
- Conveyors;
- Motor Control Cabin;
- LPG Gas storage tanks; and,
- A weighbridge and control cabin.

The new asphalt plant will be accessed via the existing road to the east of the site. Proposed site layout plans and elevations are shown in Appendix A.

3 Planning Policy and flood risk

3.1 Planning context

TAN-15 was introduced in 2004 by the Welsh Assembly Government. It is technical guidance related to development planning and flood risk using a sequential characterisation of risk based on the Welsh Government's Development and Flood Risk Advice Map (DAM). Its initial requirement is to identify the flood zones and vulnerability classification relevant to the proposed development, based on an assessment of current and future conditions.

TAN-15 assigns one of three flood risk vulnerability classifications to a development as shown in Table 3-1. The proposed development at the former Edwards Works is for construction an asphalt plant, which is considered industrial use. Consequently, the development is classified as less vulnerable development.

Table 3-1: Development categories defined by TAN-15

Development category	Types
Emergency services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood.
Highly vulnerable development	All residential premises (including hotels and caravan parks), public buildings, (e.g. schools, libraries, leisure centres), especially vulnerable industrial development (e.g. power stations, chemical plants, incinerators), and waste disposal sites.
Less vulnerable development	**General industrial**, employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

3.2 DAM zoning and vulnerability classification

Figure 3-1 shows that the proposed development site falls into Zone C2 of the DAM. The DAM is used to trigger different planning actions based on a precautionary assessment of flood risk. Zone C2 is described as areas of the floodplain without significant flood defence infrastructure. Less vulnerable development, such as that proposed within Zone C2 can take place subject to the application of a Justification Test, including the acceptability of consequences.



Figure 3-1: Development Advice Map

3.3 Neath Port Talbot County Borough Council's Local Development Plan

In January 2016, Neath Port Talbot County Borough Council (NPTCBC) adopted their Local Development Plan (LDP) (2011-2026)[4]. This LDP provides the basis for decisions on land use planning up to 2026.

Objective 11 aims "to promote and protect a diverse portfolio of employment land and employment opportunities to meet the needs of residents and businesses and stimulate economic growth".

In addition, objective 12 of NPTCBC LDP aims to "improve and strengthen the economic base of Neath Port Talbot to increase economic activity, reduce the unemployment rate in line with the Welsh average and negate some of the impacts of a reduced working age population".

The proposed development will generate employment for the local area and will therefore help to meet both objectives 11 and 12 of NPTCBC LDP.

The proposed application will create roles for five asphalt plant staff and five HGV drivers. In addition, it is estimated that ten further staff will be required within the asphalt contracting and maintenance team as the service expands into the area.

3.4 Justification test

TAN-15 states that development will be justified if it can be demonstrated that:

Its location in zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement;

4 NPTCBC LDP (2011-2026): https://www.npt.gov.uk/media/7321/ldp_written_statement_jan16.pdf

or

Its location in zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region;

and

It concurs with the aims of Planning Policy Wales and meets the definition of previously developed land;

and,

The potential consequences of a flooding event for the particular type of development have been considered and found to be acceptable.

The proposed development has been assessed against the requirements of the Justification Test with the results summarised in Table 3-2. All the criteria have been satisfied with regards to the proposed development.

Table 3-2: Justification Test applied to the proposed development

TAN 15 Justification Criteria	Comments	Achieved
Its location is necessary to assist a local authority regeneration initiative or strategy, or contribute to key employment objectives, necessary to sustain an existing settlement or region	The proposed development will contribute to objectives 11 and 12 of the Neath Port Talbot County Borough Council Local Development Plan (2011-2026) by promoting a sustainable economy.	✓
The site meets the definition of previously developed land (i.e. it is not a Greenfield site) and concurs with the aims of Planning Policy Wales (i.e. the presumption in favour of sustainable development)	The site is located on previously developed brownfield land.	✓
A Flood Consequence Assessment has been produced to demonstrate that the potential consequences of a flood event up to the extreme flood event (1 in 1000 chance of occurring in any year) have been considered and meet the [Acceptability Criteria] in order to be considered acceptable	An assessment of the flood risk at the site has been undertaken to demonstrate acceptability for the proposed development. See Section 4	✓

4 Flood Risk Assessment

This section assesses the risk to the proposed development from all sources of flooding, the risk of increasing flooding to others, and how flood risks can be managed. As a Level 1 FCA, the assessment of flood risk is based solely on a desk-desked analysis of existing flood risk data.

The primary objectives of this FCA are to determine the following:

- Whether the site is at significant risk from any source of flooding;
- If the site is at risk of flooding, determine if safe access to and from the site will be maintained during an extreme flood event; and,
- The impact of the development on flood risk to others.

4.1 Review of existing flood risk data

The latest available information of flood risk at the site, published by NRW is summarised in Table 4-1.

Table 4-1: Summary of flood risk

Source of Flooding	Onsite Presence	Description
Fluvial	×	The site is not considered to be at risk of fluvial flooding
Tidal	×	The site is located outside of the area at risk of tidal flooding.
Surface Water and small watercourses	×	The site is not at risk of flooding from surface water or small watercourses.
Groundwater	× (see section 4.4)	The site is at a low risk of flooding from groundwater.
Reservoirs	×	The site is not considered to be at risk of flooding from reservoirs.
Sewers	×	There is no evidence to suggest that the site is at risk of flooding from sewers.

4.2 Historical flooding

NRW's map of historic flood outlines shows no evidence of historical flooding at the site. There is no mention of historical flooding in Neath Port Talbot County Borough Council's Flood Risk Management Plan 2015[5] for the ward of Coedffranc West, in which the site is situated.

4.3 Tidal flood risk

The NRW Tidal National Flood Hazard Maps show that the site is not at risk of flooding during the High (1 in 30-year), Medium (1 in 200-year) or Low (1 in 1,000-year). To gain a better understanding of the flood risk associated with tidal flooding as a result of climate change, further assessment of tidal flood risk was undertaken and is discussed in Section 5.

5 NPTCBC Flood Risk Management Plan 2015: https://www.npt.gov.uk/media/5399/floodriskmanagementplan15.pdf

4.4 Groundwater flood risk

Groundwater flooding is caused by unusually high groundwater levels. It occurs as excess water emerging at the ground surface, or within manmade structures such as basements. Groundwater flooding tends to be more persistent than surface water flooding, in some cases lasting for weeks or months and can result in damage to property. This risk of groundwater flooding depends on the nature of the geological strata underlying the site, as well as on the local topography.

The NPTCBC Flood Risk Management Plan 2015 states that there are "no specific areas of historical groundwater flooding recorded in the NPT area". It can therefore be concluded that the risk of groundwater flooding at the site is low.

5 Detailed Assessment of Tidal Flood Risk

Tidal flood risk has been identified as the single significant source of flood risk to the site. Consequently, a more detailed assessment of this flood risk source has been carried out and is reported in the following section.

5.1 Extreme Sea Level Estimates

Extreme sea level estimates have been taken from the Environment Agency Coastal Flood Boundary Conditions for UK Mainland and Islands; Design Sea Levels (ref. SC060064). Extreme estuary sea level predictions are provided at node locations at approximately 2km spacing along the River Neath.

Node 484 was used to provide the 2017 extreme sea level estimates for the following return periods:

0.5% AEP = 6.49 m AOD

0.1% AEP = 6.76 m AOD

For all coastal locations, sea level rise is a major consideration and should be applied to the extreme sea level estimates. The proposed design life for this development is believed to be 50 years. Notwithstanding this, in accordance with Welsh Government Guidance on Climate Change Allowances for Planning Purposes[6] the 75-year cumulative Sea Level Rise needs to be considered for industrial land-uses. Both the 50-year and 75-year cumulative sea level rises have been analysed further as part of this assessment.

The climate change uplifts applied to the extreme sea level estimate are shown in Table 5-1.

Table 5-1 Cumulative Sea Level Rise

Period	No. of Years	mm Increase per year	Cumulative Rise (mm)	Total Sea Level Rise to 2096 (mm)
2017-2021	5	3.5	17.5	772.5
2022-2025	3	3.5	10.5	
2026-2055	30	8.0	240	
2056-2085	30	11.5	345	
2086-2096	11	14.5	159.5	

Using the climate change uplifts for Node 484, the projected still water levels for the 2071 and 2096 epochs have been calculated for both the 0.5% AEP and 0.1% AEP events. This is shown in Table 5-2.

6 Welsh Government Guidance on Climate Change Allowances for Planning Purposes: https://gov.wales/sites/default/files/publications/2018-11/flood-consequence-assessments.pdf

Table 5-2 Projected Still Water Level

Return Period	Still Water Level 2021 (mAOD)	Still Water Level 2071 (mAOD)	Still Water Level 2096 (mAOD)
0.5% AEP Event	6.51	6.94	7.26
0.1% AEP Event	6.78	7.21	7.53

5.2 Tidal Projection Modelling

Depth grids, using 1m LiDAR Digital Terrain Model (DTM) data and the projected still water level, were created to determine the predicted depth and extent of flooding at the proposed development site for the 2021 and 2096 0.5% AEP and 0.1% AEP events. This method of predicting tidal flood risk does not truly represent the connectivity of areas to tidal water, therefore, it may suggest areas are at flood risk when there is no route for the tidal water to reach it.

5.3 Present day Flood Risk

5.3.1 0.5% AEP Event (2021)

Figure 5-1 shows that the site is flood free in the 2021 0.5% AEP event. The still water level for this event is approximately 6.5mAOD. As such, the entire development site is elevated at least 0.5m above the 2021 0.5% AEP flood level.

Additionally, the projected still water level is lower than the reported elevation of the access road at the entrance to the site (7.2mAOD).



Figure 5-1 2021 0.5% AEP tidal flood event flood depths

5.3.2 0.1% AEP Event (2021)

Figure 5-2 shows that the site is flood free in the 2021 0.1% AEP tidal flood event using projected 2021 extreme sea levels. The still water level for this scenario is approximately 6.78mAOD. Therefore, the site and the access road, with elevations of at least 7.0m AOD and 7.2m AOD, respectively, are located entirely above the 2021 0.1% AEP tidal flood level.



Figure 5-2 2021 0.1% AEP tidal flood event flood depths

5.4 Flood risk for the lifetime of the development

The development lifetime is considered to be approximately 50 years. Comparison of projected still water levels for the 2071 epoch with the site topography indicates that the entire development is located above the 0.5% AEP extent.

A flood level of 7.21m AOD has been extrapolated for the 2071 0.1% AEP event. Comparison of this flood level with LiDAR elevation data indicates that low levels of flooding of up to 200mm may be experienced at the site during the 2071 0.1% AEP event.

Notwithstanding this, the Welsh Government Guidance on Climate Change Allowances for Planning Purposes suggests that a lifetime of 75 years should be assumed for non-residential developments. As such, the flood levels for the 2096 epoch are explained further in the following sections.

5.4.1 0.5% AEP Event (2096)

The site is predicted to flood in the 2096 0.5% AEP tidal flood event with a predicted still water level of 7.26mAOD. Figure 5-3 demonstrates that flood depths over much of the site are generally predicted to be less than 300mm. An isolated area in the north west of the site could experience depths of up to 310mm however, upon review this appears to be associated with a localised depression and as such is not considered representative of the risk posed to the site.

The site access road is predicted to flood up to 200mm during this event.

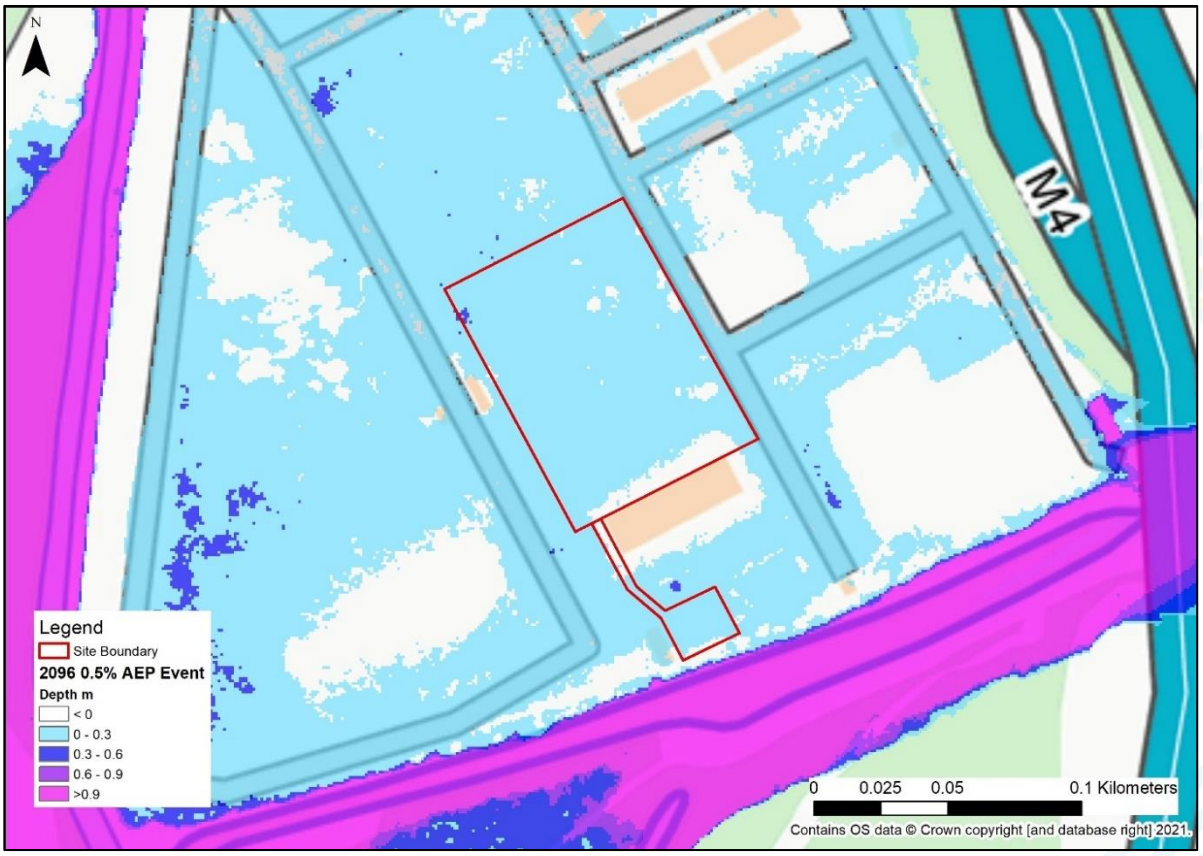


Figure 5-3: 2096 0.5% AEP tidal flood event flood depths

5.4.2 0.1% AEP Event (2096)

Figure 5-4 shows predicted flood depths at the site for the 2096 0.1% AEP flood event. During this scenario the average flood depth across the site is predicted to be 400mm, whilst the aforementioned localised depression could experience flood depths of up to 600mm

During a flood event, the site access road is predicted to flood up to 400mm.

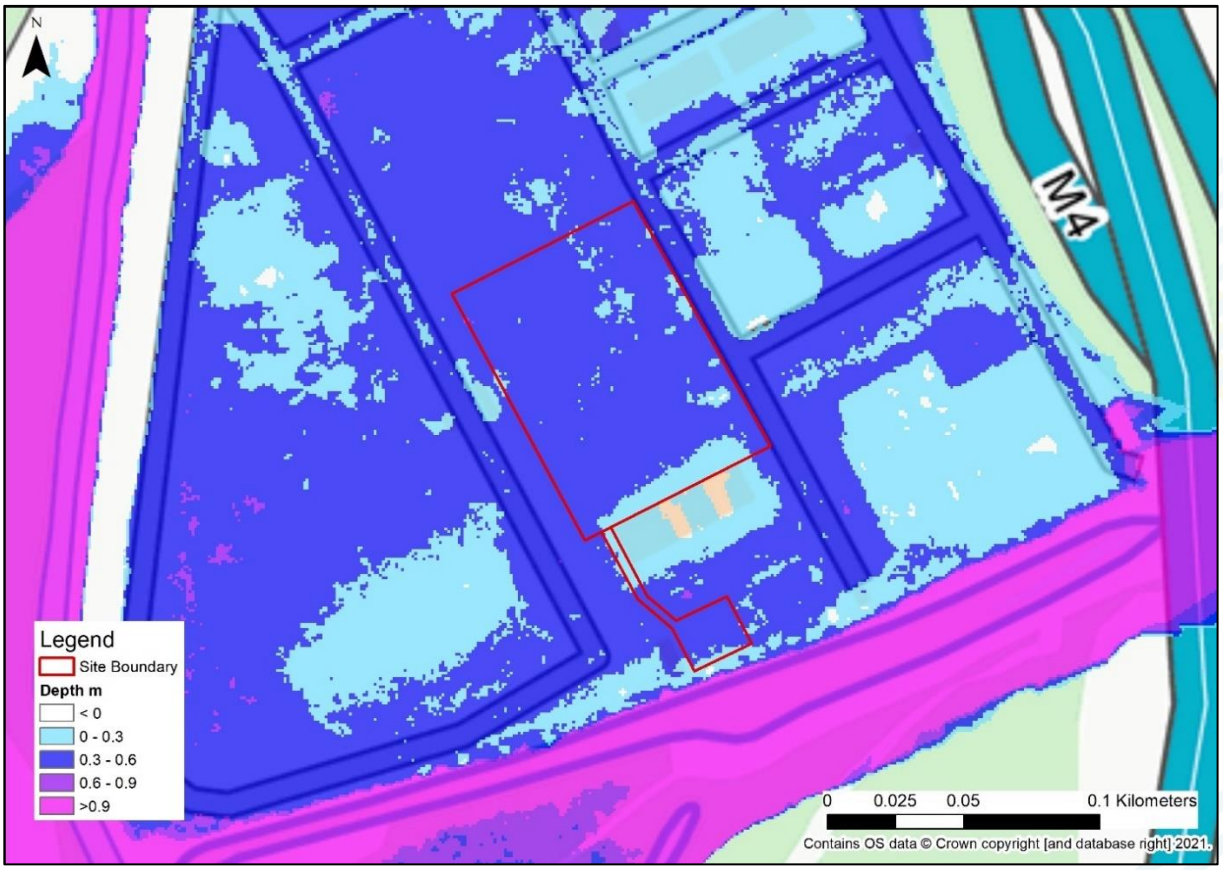


Figure 5-4: 2096 0.1% AEP tidal flood event flood depths

5.5 Flood risk summary and compliance with TAN-15

The site is currently flood free during the present day (2021) 0.5% AEP and the 0.1% AEP tidal projected modelling. In addition, the site is shown to be located above the 2071 0.5% AEP flood level. However, 200mm of flooding could be experienced at the site during the 2071 0.1% AEP event. In the future (2096) 0.5% AEP and the 0.1% AEP tidal projected modelling, flooding is anticipated to occur during both scenarios to an average depth of 200mm in the 0.5% AEP scenario and 400mm during the 0.1% AEP scenario.

A1.14 of TAN-15 outlines the requirement for development to be flood free in the 0.5% AEP plus climate change. The development lifetime is believed to be 50 years. The site is located entirely above the 2071 0.5% AEP flood level therefore is considered to pass A1.14 of TAN-15. Despite this, given that the site is anticipated to experience flooding during the 2096 0.5% AEP event, flood mitigation measures have been recommended to provide further protection (these are outlined in section 5.6).

A1.15 of TAN-15 provides indicative guidance with regard to the tolerable conditions for an industrial site during the 0.1% AEP event. For the proposed development site, TAN-15 advises that flood depths should not exceed 1000mm within the property and the access to the site. Flood depths for the 0.1% AEP event are a maximum of 600mm on the site, therefore, the proposed development complies with the indicative guidance contained within TAN-15.

5.6 Flood risk mitigation

5.6.1 Raised Slab Levels

The entire site is shown to be located above the 2071 0.5% AEP flood level. However, the projected still water level for the 2096 0.5% AEP tidal flood event is 7.2mAOD.

The client has confirmed that all structures will be developed upon a slab set 200-300mm above the existing ground levels. As such, the Finished Floor Level (FFL) of the development is considered to be at least 7.3m AOD, based upon the average ground level at the site and assuming a minimum slab depth of 200mm.

Construction of the asphalt plant upon a slab elevated at 7.3m AOD will result in the development being flood free during the 2096 0.5% AEP event, in compliance with TAN-15.

Additionally, based on a FFL of 7.3mAOD, the predicted flood depths for the 2096 0.1% AEP event will be reduced to approximately 300mm, further complying with the requirements of TAN-15.

Whilst the installation of slabs will raise ground levels at the site there will be negligible impact to third party land. Flood risk at the site is tidally sourced therefore any displacement as a result of the proposed works will be immaterial.

5.6.2 Flood warning service

NRW flood warnings for tidal surge events are typically provided 24hrs in advance of an event. Flood Warnings give notice that "flooding is expected" and "immediate action is required". A lower grade Flood Alert is used to prepare for possible flooding and will normally be issued with a greater lead-time of up to two days.

The site is covered by the 'Swansea Bay and the Gower peninsula coast' flood alert area. It is recommended that the property developer and commercial occupants sign up to these flood warnings for the lifetime of the development.

5.6.3 Emergency flood plan

The developer should prepare a Flood Emergency Plan prior to occupation. This should give consideration for effective flood warning, evacuation and access/egress routes in the event of flooding for the lifetime of the development, including details of the access road to the site from the B4290. The plan should be passed on to subsequent site owners should the site be sold.

5.6.4 Flood resilient design

The proposed development site is predicted to flood to depths of up to 300mm during the 2096 0.1% AEP event, taking the raised slab into account. It is therefore recommended that the developer considers the use of Property Flood Resilience Measures such as raised electrical sockets, tiled floors and water resilient plaster, where appropriate. Installation of these measures will enable the development to recover from a flood event quickly and in a cost-effective manner.

6 Assessment of Acceptability Criteria

TAN-15 states that for less vulnerable development to be considered within Zone C2, the proposed development must meet the requirements set out within the Justification Test including the Acceptability Criteria. An assessment of the Acceptability Criteria is summarised in Table 6-1 below. These criteria must be satisfied for the proposed development to comply with TAN-15.

Table 6-1: Acceptability Criteria for TAN-15

TAN-15 Acceptability Criteria	Comments	Assessment
Flood defences must be shown by the developer to be structurally adequate particularly under extreme overtopping conditions (i.e. that flood with a probability of occurrence of 0.1%)	N/A - There are currently no flood defences which benefit the site.	✓
The cost of future maintenance for all new/approved flood mitigation measures, including defences must be accepted by the developer and agreed with NRW.	No flood defences are required for the development. Mitigation measures are proposed to raise the site above projected the 2094 0.5% AEP sea level.	✓
The developer must ensure that future occupiers of development are aware of the flooding risks and consequences	Upon sale or transfer of the land to new occupiers, the developer should inform them of the flood risk at the site.	✓
Effective flood warnings are provided at the site	The site is within the Swansea Bay and the Gower coast flood alert area. The occupier should ensure they are signed up for the NRW flood warning service.	✓
Escape/evacuation routes are shown by the developer to be operational under all conditions	Flood depths along the access road for the site are below 1000mm (as required in TAN-15) during the 2096 0.1% AEP tidal flood event.	✓
Flood emergency plans and procedures produced by the developer must be in place	Emergency flood plans should be prepared and	✓

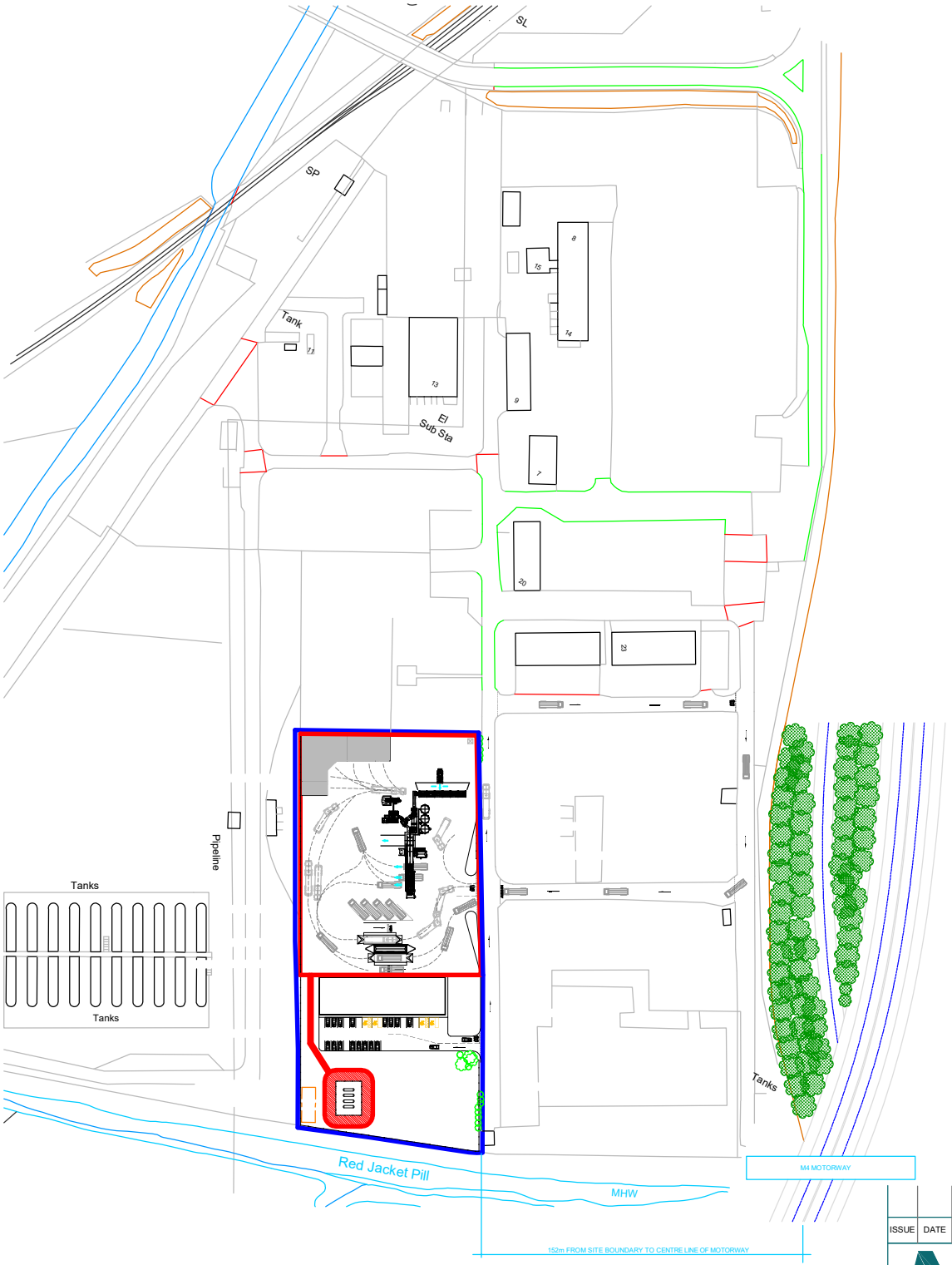
	adopted by the occupants.	
The development is designed by the developer to allow the occupier the facility for rapid movement of goods/possessions to areas away from the floodwaters	Flood resilience measures should be considered to ensure goods can be safely stored during the 2096 0.1% AEP tidal event. Appropriate actions in the event of a flood alert should be documented within a Flood Action Plan.	✓
Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood	The proposed development is at risk of flooding during the 2096 0.1% AEP event. Flood resilience measures have been recommended and should be considered in the design of the development.	✓
No flooding elsewhere	The risk of flooding to the site is tidal. As such, displacement caused raising land is immaterial and impact to third parties negligible.	✓
The development should be designed to be flood free during the 0.5% tidal flood	The proposed development is predicted to be flood free during a 2021 and 2071 0.5% AEP events. A slab will be constructed as part of the development raising the FFL to 7.3mAOD. As such, post development, the site is predicted to be flood free during a 2096 0.5% AEP event.	✓
The development should be designed so that in an extreme (1 in 1000 chance) event there would be less than 1000mm of water on access roads and within the property	Post development, flood depths at the site, and along the access road, are not anticipated to exceed 330mm during the 2096 0.1% AEP event.	✓

7 Conclusions and recommendations

- JBA Consulting were commissioned by SigmaRoc PLC, to prepare a Level 1 Flood Consequence Assessment (FCA) in support of a planning application at the former Edwards Works, Llandarcy for industrial use.
- The site is in close proximity to the River Neath, with the Red Jacket Pill tidal channel off the River Neath located to the south of the site. The Tennant Canal is located 200m to the east of the site.
- The proposal is for an asphalt plant with a design life of approximately 50 years.
- The proposed development site falls within Zone C2 of NRW's Development Advice Maps. Zone C2 is described as "areas of the floodplain without significant flood defence infrastructure". The proposed development is classified as "less vulnerable development" and is therefore subject to the application of a Justification Test, including the Acceptability Criteria.
- The proposed industrial development is on brownfield land and will contribute to objectives 11 and 12 of the Neath Port Talbot County Borough Council Local Development Plan by promoting a sustainable economy.
- The site is not shown to be at risk of flooding from tidal, fluvial or surface water and small watercourses flood risk sources according to the National Resources Wales National Flood Hazard Maps.
- Flood risk from groundwater is considered to be low.
- Detailed assessment of tidal flood risk shows that the proposed development site is predicted to be flood free during the 2021 0.5% AEP and 0.1% AEP events. In addition, the development is shown to be flood free during the 2071 0.5% AEP flood event.
- In the 2096 0.5% AEP and 0.1% AEP tidal events, flooding is anticipated to occur at the site with average depths of 200mm modelled for the 0.5% AEP scenario and 400mm during the 0.1% AEP scenario.
- TAN-15 requires development to be flood free in a 0.5% AEP tidal event for its design lifetime. The proposed development site is currently flood free during the 2071 0.5% AEP event, which represents 50 years of climate related sea level increases.
- The client has confirmed that all structures will be developed on a slab set 200-300mm above existing ground levels. As a result, the development will be flood free during the 2096 0.5% AEP event. With the proposed development raised 200-300mm above surrounding ground levels, flood depths during the 0.1% AEP (2096) event will be reduced to approximately 300mm.
- The proposed development satisfies the requirements of the Justification Test including managing flood risk in line with the acceptability criteria. The development complies with the aims of TAN-15 and Planning Policy Wales.

Appendices
Appendix A- Proposed Plans

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PLAN VIEW

CONSTRUCTION AREA	BOUNDARY AREA
7,586 sq/m	12,157sq/m
1.875 Acres	3.004 Acres
0.759 Hectares	1.215 Hectares

ISSUE	DATE	REVISION	DRN BY	APP'D BY

MW Engineering Solutions Ltd
Tel: +44 (0) 7703 193107
Web: www.mwengineeringsolutions.co.uk

PROJECT:
PROPOSED ASPHALT PLANT FACILITY (LLANDARCY)

CLIENT:
SIGMAROC LTD

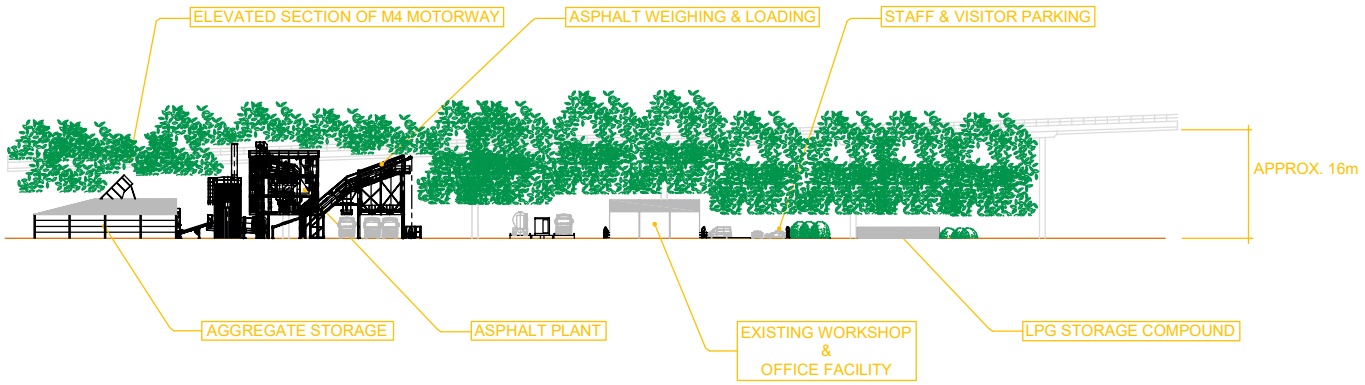
DRAWING TITLE:
SITE DEVELOPMENT DRAWING

ORIGINATOR: MW	DATE: 16.11.20	SIG:
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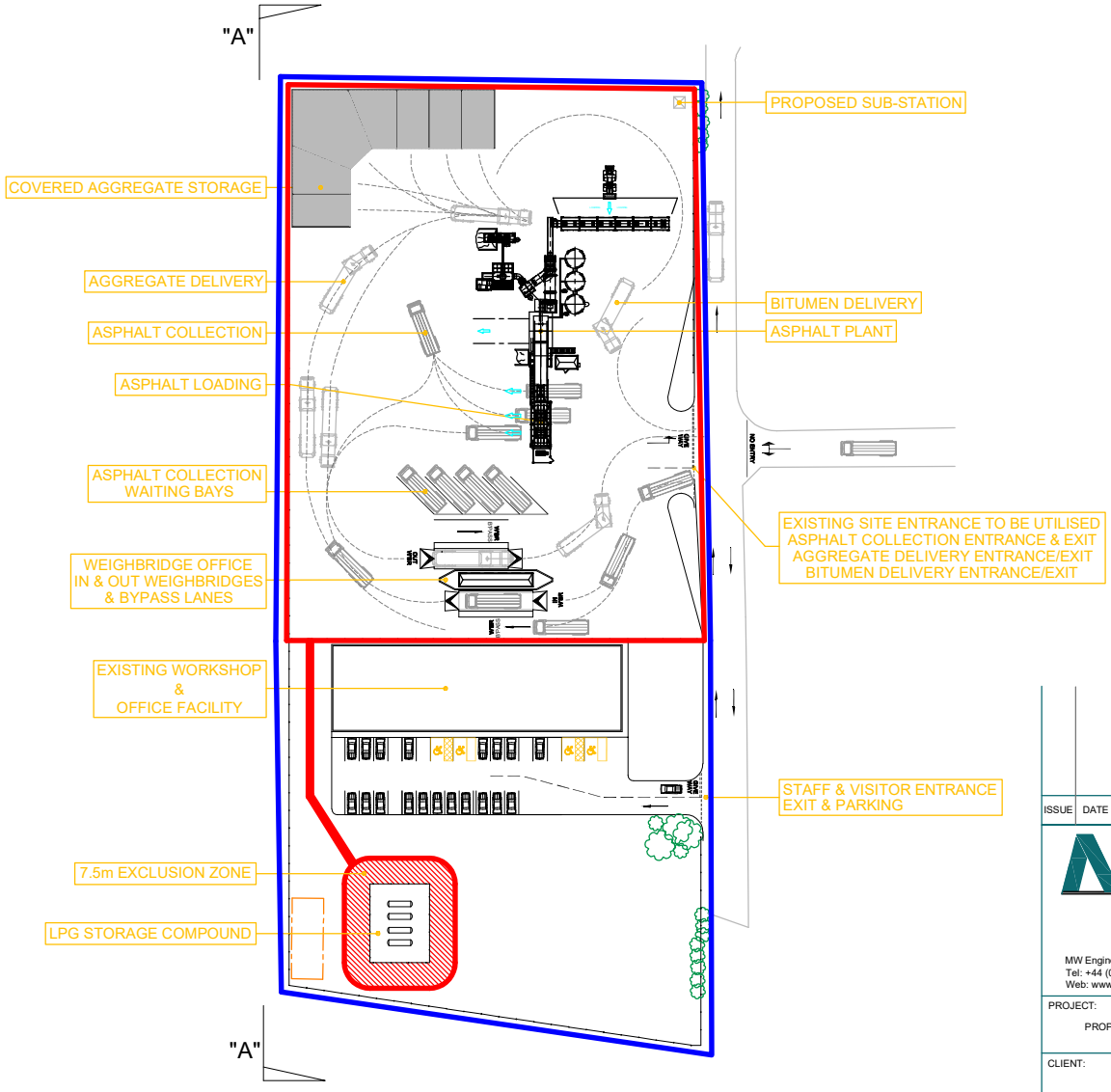
MWES DRAWING No.:
SIGMAROC - LLANDARCY - SITE DEVELOPMENT DRAWING

CLIENT DRAWING No: N/A		SHEET SIZE A2
REVISION:	SCALE: 1:1.25	SHEET No. 1 OF ***

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ELEVATION ON "A"-"A"



PLAN VIEW
SCALE FACTOR 2

ISSUE	DATE	REVISION	DRN BY	APP'D BY

MW Engineering Solutions Ltd
Tel: +44 (0) 7703 193107
Web: www.mwengineeringsolutions.co.uk

PROJECT:
PROPOSED ASPHALT PLANT FACILITY (LLANDARCY)

CLIENT:
SIGMAROC LTD

DRAWING TITLE:
PLAN VIEW AND ELEVATION DRAWING

ORIGINATOR: MW	DATE: 16.11.20	SIG:
CHECKED: MW	DATE: 16.11.20	SIG:

MWES DRAWING No.:
SIGMAROC - LLANDARCY - PLAN & ELEVATION

CLIENT DRAWING No: N/A		SHEET SIZE A2
REVISION:	SCALE: 1:1.25	SHEET No. 1 OF ***

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APPENDIX 06

Correspondence with NRW

Ian Walton

From: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Sent: 07 October 2022 14:16
To: Ian Walton
Subject: RE: LLandarcy Asphalt Plant

Good afternoon Ian

I have now reviewed the information provided, again my apologies for the time taken to get a response back to you.

Firstly I have checked with our permitting service and a permit will be required for this operation, however no modelling will be required. You will be required to submit a robust management plan as part of the application.

In terms of your proposal I have a couple of observations to make.

You mention in your e-mail that hydrocarbons will be prevented from discharging through use of two baffle plates. This is not a suitable or robust enough solution when considering the risk from associated plant, material and vehicle movements. A class 1 oil interceptor will be required, please refer to GGP 3 (guidance-for-pollution-prevention-3-2022-update-v2.pdf (netregs.org.uk)) which will help you determine sizing and type.

In addition to the oil interceptor I would recommend installing penstocks at appropriate points along the system to allow for isolation should an incident occur. This will aid incident response and associated clean-up and recovery.

One query I have was in regard to sewage on site. I note you have an amenity building, can you tell me how sewage on site will be dealt with? Depending on your approach this may require further advice and guidance.

Please let me know if you need further information

Regards

Chris Palmer

Senior Environment Officer

Neath Port Talbot Environment Team

Cyfoeth Naturiol Cymru / Natural Resources Wales
Symudol / Mobile: 07773 040314

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi. Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Ian Walton <iwalton@slrconsulting.com>
Sent: 03 October 2022 12:14
To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Subject: RE: LLandarcy Asphalt Plant

Chris

Thanks for your email and hope you are now fully recovered.

If you could get back to me with an indication if a bespoke permit is likely to be required it would be appreciated.

Regards

Ian

Ian Walton
Technical Director - Hydrology & Hydrogeology

2308
+44 29 2049 1010
+44 7807 068794
iwalton@slrconsulting.com

SLR Consulting Limited
Ground Floor, Helmont House, Churchill Way, Cardiff, CF10 2HE

From: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Sent: 03 October 2022 12:08
To: Ian Walton <iwalton@slrconsulting.com>
Cc: Nick Cleary <NickCleary@gdharries.co.uk>
Subject: RE: LLandarcy Asphalt Plant

Good afternoon Ian,

Please accept my apologies for not getting back to you sooner, I have been off with illness for a number of weeks and have only recently returned to work.

I will look through your proposals in detail and get back to you by the end of the week.

Regards

Chris Palmer

Senior Environment Officer

Neath Port Talbot Environment Team

Cyfoeth Naturiol Cymru / Natural Resources Wales
Symudol / Mobile: 07773 040314

Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy.

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi. Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Ian Walton <iwalton@slrconsulting.com>
Sent: 03 October 2022 11:23
To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Cc: Nick Cleary <NickCleary@gdharries.co.uk>
Subject: RE: LLandarcy Asphalt Plant
Importance: High

Chris

It would be appreciated if you could respond to my email

Many thanks

Ian

Ian Walton
Technical Director - Hydrology & Hydrogeology

2308
+44 29 2049 1010
+44 7807 068794
iwalton@slrconsulting.com

SLR Consulting Limited
Ground Floor, Helmont House, Churchill Way, Cardiff, CF10 2HE

From: Ian Walton <iwalton@slrconsulting.com>
Sent: 31 August 2022 18:01
To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Cc: Nick Cleary <NickCleary@gdharries.co.uk>
Subject: FW: LLandarcy Asphalt Plant

Chris

I would be grateful if you could respond to my email below as we are preparing a full SAB application and clearly this is a matter that will be considered as part of the determination of the application.

Many thanks

Ian

Ian Walton

Technical Director - Hydrology & Hydrogeology

2308
+44 29 2049 1010
+44 7807 068794
iwalton@slrconsulting.com

SLR Consulting Limited
Ground Floor, Helmont House, Churchill Way, Cardiff, CF10 2HE

From: Ian Walton <iwalton@slrconsulting.com>
Sent: 16 August 2022 16:02
To: Chris.Palmer@cyfoethnaturiolcymru.gov.uk
Cc: Greg Altria <galtria@slrconsulting.com>
Subject: LLandarcy Asphalt Plant

Dear Chris

SLR has been retained to develop the surface water management system to serve the proposed asphalt plant at LLandarcy and I am therefore following up on the Pre-Application Advice Enquiry initially made on behalf of G D Harries by JBA (the email chain is set out below for reference)

I have enclosed a copy of the preliminary drawings we have prepared that which are currently being reviewed by the SAB as art of a pre-application enquiry and would be grateful if you could confirm if you consider a permit will be required for the proposed discharge to the Red Jacket Pil.

As shown by the enclosed drawings, it is proposed to formally drain the operational area of the asphalt plant via a settlement lagoon and swale before discharge to the Red Jacket Pil. We anticipate that the only issue with the quality of the surface water runoff will be with suspended solids arising from the movement of the aggregate feedstock around the facility. We understand that the asphalt plant itself is unlikely to give rise to a source of potential contamination of surface water runoff Hydrocarbons derived from delivery and operational vehicles will be intercepted in the lagoon.

We would therefore question if a bespoke B6 Permit is likely to be required and if so if modelling would be required (Part 8b) as the receiving watercourse at this location is tidal. We assume the type of effluent would be '*Effluent and/or contaminated surface water run-off arising from the operation of an installation*'.

For your information, the settlement lagoon has been designed to retain up to a 0.063mm diameter particle in response to a 5% AEP rainfall event allowing for the impact of climate change. This requires the outflow from the settlement lagoon to be attenuated to $100ls^{-1}$. Excess flow will overflow from the lagoon. A baffle plate fitted to the outlet and overflow will ensure that any hydrocarbons washed into the lagoon will be retained for all storm events.

It is common practice to 'treat' flows up to the 5% AEP storm event as water quality in the receiving watercourses for more extreme events is likely to be highly turbid due to suspended solids washed off the upstream catchment. This will also ensure that the first flush flows are treated prior to discharge. The swale, if appropriately planted, will provide secondary treatment prior to discharge to the Red Jacket Pil.

Finally please could you confirm that a Flood Risk Activities Permit is not required as the Red Jacket Pil is an ordinary watercourse.

I trust that the foregoing and enclosed drawings will provide you with sufficient information to respond to my enquiry, however, if you have any queries please do not hesitate to contact me.

Regards

Ian

Ian Walton
Technical Director - Hydrology & Hydrogeology
+44 29 2049 1010
+44 7807 068794
iwalton@slrconsulting.com

SLR Consulting Limited
Ground Floor, Helmont House, Churchill Way, Cardiff, CF10 2HE

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From: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Date: Friday, 8 October 2021 at 14:57
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Cc: David McClelland <petrumconsultingltd@gmail.com>
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Hi Tom,

It's still quite limited information. Based on this, however, I would say a permit is likely to be required, as the risk from the plant is not isolated.

Isolation could be achieved via a separate sealed drainage system around the plant, draining to a sealed sump which would need regular emptying (but at considerable cost I would imagine).

The permit limits will be set by our permitting team during the determination process. I wouldn't be able to give you exact but I imagine a fairly neutral pH limit, a suspended solids limit of approx 50mg/l or less and a condition detailing no visible oils and greases to be present in the discharge.

To apply for a permit you can find all the information at our website here.

Regards

Chris

Chris Palmer
Environment Officer
Neath Port Talbot Environment Team

Cyfoeth Naturiol Cymru / Natural Resources Wales

Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy.

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi. Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 07 October 2021 17:00
To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Cc: David McClelland <petrumconsultingltd@gmail.com>
Subject: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Hi Chris

Following our call a couple of weeks ago the client has informed me that the following operations will be occurring at the site:

On the site there will be a fixed plant which will require greasing and have oil filled gearboxes etc and also a diesel driven loading shovel and some HGVs.

My understanding is that this area will not be undercover. Therefore, in light of the additional information, I was wondering whether you could provide details of (a) whether a permit would be required, (b) if so, what type of permit and (c) any likely limits. Also, please can you confirm the next steps should a permit be required.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Sent: 23 September 2021 12:07
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good afternoon Tom

As we discussed, the level of treatment that is proposed for the site looks acceptable.

The requirement for a EPR Discharge Activity Permit will depend largely the asphalt plant and if it will generate any effluent, directly generated through its process or rain related run-off from the process areas.

Depending on the details of that, if a WQ permit is required it will likely have limits placed on aspects such as (but not limited to) suspended solids, pH, visible oil and grease.

One aspect we didn't discuss is the provision for a sample point, this would be a requirement of the permit. It would also be something I recommend in order for the operators self-monitoring purposes.

Please get in touch if you receive any further details from your client in respect of the asphalt plant design. I can perhaps give further advise depending on the detail.

Kind regards

Chris

Chris Palmer

Environment Officer

Neath Port Talbot Environment Team

Cyfoeth Naturiol Cymru / Natural Resources Wales
Symudol / Mobile: 07773 040314

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi. Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 22 September 2021 13:50

To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Subject: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Hi Chris

Thank you for sparing some time earlier to run through the Llandarcy development with me.

As mentioned, if you would be kind enough to provide a summary of the requirements from NRW regarding the development that would be much appreciated. As part of the response, can you please also confirm the type(s) of permit which may be required?

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Tom Smith
Sent: 21 September 2021 09:02
To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Hi Chris

1:30 on Wednesday would work perfect.

Thanks
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Sent: 20 September 2021 09:21
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good Morning Tom

Would you be free for a chat over teams on Wednesday afternoon at 13:30 to discuss the pre-app?

Regards

Chris

Chris Palmer

Environment Officer

Neath Port Talbot Environment Team

Cyfoeth Naturiol Cymru / Natural Resources Wales

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi. Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Tom Smith <Tom.Smith@jbaconsulting.com>
Sent: 17 September 2021 10:23
To: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Subject: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Hi Chris

Thank you for getting in touch.

I look forward to receiving your response next week. You should have a copy of the proposed surface water drainage strategy for the development (since the initial NRW enquiry was submitted this has received pre-app SAB approval from NPT).

A teams call may be beneficial to go over NRW's requirements (if any) however, please can I also get your response in writing so that I can forward across to the developer.

Kind regards
Tom
Tom Smith

Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652



From: Palmer, Chris <Chris.Palmer@cyfoethnaturiolcymru.gov.uk>
Sent: 16 September 2021 12:59
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Subject: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good afternoon Tom,

Your request for a pre application has now been passed to me. Please accept my apologies for the lack of response until now.

I will begin to look at this today and tomorrow and will get back to you by next week and perhaps we can arrange a discussion over teams?

Regards

Chris Palmer

Environment Officer

Neath Port Talbot Environment Team

Cyfoeth Naturiol Cymru / Natural Resources Wales

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi. Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Enquiries <enquiries@cyfoethnaturiolcymru.gov.uk>
Sent: 14 September 2021 12:41
To: Neath Port Talbot <npt.et@cyfoethnaturiolcymru.gov.uk>
Subject: FW: RE: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good afternoon team,
I've just had a call from a Mr Tom Smith from JDA Consulting. He was chasing a response to a Pre-app made back on the 14th of June.

Details:
WPCC10858
PPN-00563

Mobile; 07796015829
Email: tom.smith@jdaconsulting.com

The application has been logged and uploaded to the DMS correctly from what I can see.

PPN-00563 (sharepoint.com)

Would you be able to provide an update on this application please?

Kind regards

Llŷr Morgan
Cymorth Cyswllt Cyfoeth / Customer Hub Support
Cwsmer, Cyfathrebu a Masnach/Customer, Communications and Commercial
Cyfoeth Naturiol Cymru/Natural Resources Wales
Ffôn/Tel: 0300 065 3000
Ebost/Email: llyr.morgan@cyfoethnaturiolcymru.gov.uk / llyr.morgan@naturalresourcewales.gov.uk
Gwefan / Website:http://www.cyfoethnaturiolcymru.gov.uk//www.naturalresourceswales.gov.uk
Twitter:twitter.com/NatResWales
Facebook: facebook.com/NatResWales
Flickr: Flickr.com/NatResWales
Youtube: youtube.com/NatResWales
Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy.

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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi

Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay
Siaradwr Cymraeg

---------- Original Message ----------
From: Melissa Broad <melissa.broad@cyfoethnaturiolcymru.gov.uk>;
Received: Tue Sep 14 2021 10:09:30 GMT+0100 (British Summer Time)
To: Enquiries Queue <enquiries@cyfoethnaturiolcymru.gov.uk>;

Cc: Stephen Badman <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Test Test welsh <stephen.badman@cyfoethnaturiolcymru.gov.uk>; test test <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Bethan Williams <bethan.williams@cyfoethnaturiolcymru.gov.uk>; Stephen Badman <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Michael Williams <stephen.badman@cyfoethnaturiolcymru.gov.uk>; test test <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Edward Jones <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Liam Jones <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Test Test <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Fernleigh Design Ltd. <stephen.badman@cyfoethnaturiolcymru.gov.uk>; A.J.S. LANDSCAPES (CWMBRAN) LTD <stephen.badman@cyfoethnaturiolcymru.gov.uk>; CARDIFF GALVANIZERS (1969) LTD <stephen.badman@cyfoethnaturiolcymru.gov.uk>; NHR Joinery <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Papel Recycling Ltd <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Dovey Valley Shooting Ground <stephen.badman@cyfoethnaturiolcymru.gov.uk>; All Round Energy Solutions Limited <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Cutting Edge Landscapes (wm) Ltd <stephen.badman@cyfoethnaturiolcymru.gov.uk>; Stephen Badman <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-022449 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-003736 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-014395 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-015424 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-018053 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-011821 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-000147 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-000125 <stephen.badman@cyfoethnaturiolcymru.gov.uk>; HZW-015399 <stephen.badman@cyfoethnaturiolcymru.gov.uk>;
Subject: RE: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Hi Llyr,

WQ Permitting don't provide pre-app advice as it can be seen as pre-determining a permit. Looking at the chain of correspondence it was sent to the Neath Port Talbot Team to respond. You would need to contact them as they should have dealt with the request.

Thanks, Mel

From: Enquiries <enquiries@cyfoethnaturiolcymru.gov.uk>
Sent: 14 September 2021 10:05
To: Broad, Melissa <Melissa.Broad@cyfoethnaturiolcymru.gov.uk>
Cc: Badman, Stephen <Stephen.Badman@cyfoethnaturiolcymru.gov.uk>; Williams, Bethan <Bethan.Williams@cyfoethnaturiolcymru.gov.uk>
Subject: FW: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good morning Melissa,
I've just had a call from a Mr Tom Smith from JDA Consulting. He was chasing a response to a Pre-app made back on the 14th of June.

Details:
WPCC10858
PPN-00563

Mobile; 07796015829
Email: tom.smith@jdaconsulting.com

The application has been logged and uploaded to the DMS correctly from what I can see.

PPN-00563 (sharepoint.com)

Would you be able to provide an update on this application please?

Kind regards

Llŷr Morgan
Cymorth Cyswllt Cyfoeth / Customer Hub Support

Cwsmer, Cyfathrebu a Masnach/Customer, Communications and Commercial
Cyfoeth Naturiol Cymru/Natural Resources Wales
Ffôn/Tel: 0300 065 3000
Ebost/Email: llyr.morgan@cyfoethnaturiolcymru.gov.uk / llyr.morgan@naturalresourcewales.gov.uk
Gwefan / Website:http://www.cyfoethnaturiolcymru.gov.uk//www.naturalresourceswales.gov.uk
Twitter:twitter.com/NatResWales
Facebook: facebook.com/NatResWales
Flickr: Flickr.com/NatResWales
Youtube: youtube.com/NatResWales
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Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay
Siaradwr Cymraeg

---------- Original Message ----------
From: Thomas Smith <tom.smith@jbaconsulting.com>;
Received: Tue Sep 14 2021 09:45:53 GMT+0100 (British Summer Time)
To: Enquiries Queue <enquiries@cyfoethnaturiolcymru.gov.uk>;
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good Morning

I have been waiting on a response to the above enquiry for 3 months (sent the 14th June). The last piece of correspondence I had from NRW regarding enquiry ref WPCC10858 was on the 29th July (email below) stating that the aim is to respond within 10 working days. Please can I have NRW's response to our pre-planning advice enquiry. As I am sure you will appreciate the client is getting frustrated with the time this is taking and the lack of correspondence.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652

From: Enquiries <enquiries@cyfoethnaturiolcymru.gov.uk>
Sent: 29 July 2021 10:20
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good morning,

Thank you for your contacting Natural Resources Wales (NRW).

I'm sorry no one has been in touch as of yet – our aim is to respond to queries within 10 working days. If we need more time to provide a fuller answer, we will usually email you to keep you in the loop.

I will chase this with the team today and ask for someone to get back to you as soon as possible.

If you need anything else from us, please let me know.

Kind regards,

Bethan

Bethan M Williams
Cymorth Cyswllt Cyfoeth / Customer Hub Support

Cwsmer, Cyfathrebu a Masnach/Customer, Communications and Commercial
Cyfoeth Naturiol Cymru/Natural Resources Wales
Ffôn/Tel: 0300 065 3000

Gwefan/Website:http://www.cyfoethnaturiolcymru.gov.uk//www.naturalresourceswales.gov.uk
Twitter:twitter.com/NatResWales
Facebook: facebook.com/nNatResWales
Flickr: Flickr.com/NatResWales
Youtube: youtube.com/NatResWales

---------- Original Message ----------
From: Thomas Smith <tom.smith@jbaconsulting.com>;
Received: Wed Jul 28 2021 14:57:02 GMT+0100 (British Summer Time)
To: Enquiries Queue <enquiries@cyfoethnaturiolcymru.gov.uk>;
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good Afternoon

I was wondering whether there is any update regarding Pre-Application Advice Enquiry submitted on the 14th June.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652

From: Enquiries <enquiries@cyfoethnaturiolcymru.gov.uk>
Sent: 08 July 2021 08:23
To: Tom Smith <Tom.Smith@jbaconsulting.com>
Subject: RE: Pre-Application Advice Enquiry: WPCC10858 NRW:08004624

Good morning,

Thank you for your contacting Natural Resources Wales (NRW).

Just to make you aware, I have passed your email and the details over to the Water Quality Permitting team and have asked them for more information. Either they or I will get back to you shortly.

If you need anything else from us, please let me know.

Kind regards,

Bethan

Bethan M Williams
Cymorth Cyswllt Cyfoeth / Customer Hub Support

Cwsmer, Cyfathrebu a Masnach/Customer, Communications and Commercial
Cyfoeth Naturiol Cymru/Natural Resources Wales
Ffôn/Tel: 0300 065 3000

Gwefan/Website:http://www.cyfoethnaturiolcymru.gov.uk//www.naturalresourceswales.gov.uk
Twitter:twitter.com/NatResWales
Facebook: facebook.com/nNatResWales
Flickr: Flickr.com/NatResWales
Youtube: youtube.com/NatResWales

---------- Original Message ----------
From: Thomas Smith <tom.smith@jbaconsulting.com>;
Received: Wed Jul 07 2021 10:22:55 GMT+0100 (British Summer Time)
To: Enquiries Queue <enquiries@cyfoethnaturiolcymru.gov.uk>;
Subject: Pre-Application Advice Enquiry: WPCC10858

Good morning

I hope you are well.

I submitted pre-planning advice enquiry, ref: WPCC10858, on the 14th June regarding discharge of water from a site in Llandarcy. I was wondering if there is any update on progress and when I should expect to receive a response.

Thank you in advance for your help.

Kind regards
Tom
Tom Smith
Flood Risk Analyst | JBA Consulting
JBA Consulting, 35 Perrymount Rd, Haywards Heath RH16 3BW
t: 01444 473652

APPENDIX 07

Drainage analysis

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 272578 194823 SS 72578 94823
Data Type	Point
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	5
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	62.000	0.150	413.3	0.610	5.00	0.0	0.600	v	-6	Pipe/Conduit	
1.001	8.000	0.040	200.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.002	44.000	0.220	200.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.003	6.000	0.040	150.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
2.000	13.000	0.087	149.4	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.004	16.000	0.150	106.7	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.005	35.000	0.070	500.0	0.000	0.00	0.0	0.600	\/	-8	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.00	6.800	0.610	0.0	0.0	0.0	1.68	1511.3	82.6
1.001	50.00	5.00	6.650	0.610	0.0	0.0	0.0	1.43	228.1	82.6
1.002	50.00	5.00	6.610	0.610	0.0	0.0	0.0	1.43	228.1	82.6
1.003	50.00	5.00	6.390	0.610	0.0	0.0	0.0	1.66	263.6	82.6
2.000	50.00	5.00	6.737	0.000	0.0	0.0	0.0	0.82	14.5	0.0
1.004	50.00	5.00	6.350	0.610	0.0	0.0	0.0	1.97	313.0	82.6
1.005	50.00	5.00	6.200	0.610	0.0	0.0	0.0	2.81	18505.5	82.6

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Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.006	6.000	0.040	150.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.007	8.000	0.040	200.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.006	50.00	5.00	6.130	0.610	0.0	0.0	0.0	1.66	263.6	82.6
1.007	50.00	5.00	6.090	0.610	0.0	0.0	0.0	1.43	228.1	82.6

Conduit Sections for Storm

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m²)
-6	v	300	500	18.4		1.040	0.900
-8	\/	500	1400	18.4		2.819	6.592

Surcharged Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007		7.200	6.050	0.000	0	0

Datum (m) 0.000 Offset (mins) 0

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
60	6.960	420	1.190	780	6.960	1140	1.190	1500	6.960	1860	1.190
120	6.800	480	1.290	840	6.800	1200	1.290	1560	6.800	1920	1.290
180	5.930	540	2.090	900	5.930	1260	2.090	1620	5.930	1980	2.090
240	4.620	600	2.390	960	4.620	1320	2.390	1680	4.620	2040	2.390
300	3.200	660	4.880	1020	3.200	1380	4.880	1740	3.200	2100	4.880
360	1.340	720	6.190	1080	1.340	1440	6.190	1800	1.340	2160	6.190

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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 272578 194823 SS 72578 94823
Data Type	Point
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	2013
Site Location	GB 272578 194823 SS 72578 94823
Data Type	Point
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 120, 240, 480, 720, 1440, 2880
Return Period(s) (years)	2, 20, 100
Climate Change (%)	0, 30, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	1	240 Summer	100	+30%		100/240 Summer		
1.001	2	240 Summer	100	+30%	100/120 Summer			
1.002	3	240 Winter	100	+30%	100/120 Summer			
1.003	4	120 Winter	100	+30%	20/120 Summer			
2.000	4	120 Winter	100	+30%	20/120 Summer			
1.004	4	120 Winter	100	+30%	20/120 Summer			
1.005	5	120 Winter	100	+30%				
1.006	6	120 Winter	100	+30%	2/120 Summer			
1.007	9	120 Winter	2	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	7.300	0.000	0.003	0.05		73.3	FLOOD	
1.001	2	7.223	0.123	0.000	0.33		55.4	FLOOD RISK*	

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.002	3	7.199	0.139	0.000	0.27		55.7	FLOOD RISK	
1.003	4	7.091	0.251	0.000	0.57		90.7	FLOOD RISK	
2.000	4	6.995	0.108	0.000	0.02		0.2	FLOOD RISK	
1.004	4	6.995	0.195	0.000	0.41		88.8	FLOOD RISK	
1.005	5	6.938	-0.662	0.000	0.01		68.9	FLOOD RISK	
1.006	6	6.926	0.346	0.000	0.58		97.5	FLOOD RISK*	
1.007	9	6.540	0.000	0.000	0.48		80.5	SURCHARGED*	

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APPENDIX 08

Landscape and Amenity Plan

North

10 20 30 me

Scale Bar

KEY

Application Boundary

Site Boundary

Offsite Vegetation
(approx shown)

Grassland
(Seed Mix Germinal A4)

Herbaceous Plants
(Plugs or small Pots)

Biodiversity Enhancement Planting
(Cell-grown stock)

Covered Aggregate bays

Ramp

Asphalt Plant Foundation Slab

Existing Workshop Building

Existing Car Park

Existing Garage

SWALE 1
See Note 1.

SWALE 2
See Note 2.

FILTER STRIP
See Note 3.

AMENITY AREA / BIO-DIVERSITY ENHANCEMENT PLANTING
See Note 4.

Gas Storage Compound

Aco Drain

ACO S100 S01

See Detail A for installation of ACO drain

Erosion Protection (See Detail C)

Catchpit (See Detail C)

Containment Kerb and Swale (See Detail D)

Catchpit (See Detail B)

Flowgas emergency pedestrian egress route (See Detail E)

Headwall (See Detail F)

Manhole (See Detail G)

Filter Strip (See Detail K)

Catchpit (See Detail L)

Flowgas emergency pedestrian egress route (See Detail E)

Manhole (See Detail G)

Headwall (See Detail H)

Filter Strip (See Detail I)

Sampling Chamber

Gate on boundary fpr acess to headwall

See Detail J for section along Outfall

Headwall (See Detail H)

HEADWALL (SEE DETAIL H)

KERB

GIVE WAY

GARAGE

RED JACKET PILL

Mean High Water

LANDSCAPE SPECIFICATION NOTES FOR DRAINAGE FEATURES: WETLAND SEEDING & PLANTING

Note 1.

Swale 1 along SW Edge of Site (Drainage Detail D)

Soil specification to be a manufactured engineering soil to achieve the required performance standards, to the engineer's specification, to ensure compliance with SAB provisions (Refer to engineering drawings). The surfaces of batters or side slopes around bioretention systems should have at least 200 mm of topsoil on them. The topsoil should meet the requirements of BS 3882:2015.

Surface of the finished soil profile to be sown with Germinal A4 fescue-based grass seed mixture, which is tolerant of damp to wet conditions and periodic inundation. Sowing Rate: 20gms/m^2. No pre-seeding fertiliser to be applied.

Following germination of the seed mix - and once the sward has achieved a height of 50mm, following the first mowing and removal of all arisings - plant the following native herbaceous plant species, to address the amenity and biodiversity statutory standards (Sustainable Drainage System Standards for Wales S4 & S5) required by the SAB approach to drainage design:

Botanical Name	Common Name	Percentage (by number)
Phalaris arundinacea	Reed Canary-grass	40%
Glyceria maxima	Reed Sweet-grass	10%
Filipendula ulmaria	Meadowsweet	20%
Iris pseudacorus	Yellow Flag	5%
Lythrum salicaria	Purple Loosestrife	5%
Eupatorium cannabinum	Hemp Agrimony	15%

Plants to be supplied as either plug plants or very small container-grown stock (0.5 litre capacity/90-120mm diameter). These are to be planted in single-species groups of 5-10 plants, and at a density of 15 plants per square metre.

All plants are to be planted on the floor of the swale and on the lower swale side slopes (gradient 1:3), within 1 metre horizontal distance of the edge of the floor of the swale.

The following species are to be concentrated within 10 metres of the edge of the erosion protection feature at the inlet structure (Detail C):

Phalaris arundinacea	Reed Canary-grass
Glyceria maxima	Reed Sweet-grass

Care should be taken not to compact the soil below the swale as this will reduce its capacity for infiltration.

Note 2.

Swale 2 along SE Edge of Site (Drainage Detail I)

Soil specification to be a manufactured engineering soil to achieve the required performance standards, to the engineer's specification, to ensure compliance with SAB provisions (Refer to engineering drawings). The surfaces of batters or side slopes around bioretention systems should have at least 200 mm of topsoil on them. The topsoil should meet the requirements of BS 3882:2015.

Surface of the finished soil profile to be sown with Germinal A4 fescue-based grass seed mixture, which is tolerant of damp to wet conditions and periodic inundation. Sowing Rate: 20gms/m^2. No pre-seeding fertiliser to be applied.

Following germination of the seed mix - and once the sward has achieved a height of 50mm, following the first mowing and removal of all arisings - plant the following native herbaceous plant species, to address the amenity and biodiversity statutory standards (Sustainable Drainage System Standards for Wales S4 & S5) required by the SAB approach to drainage design:

Botanical Name	Common Name	Percentage (by number)
Phalaris arundinacea	Reed Canary-grass	40%
Glyceria maxima	Reed Sweet-grass	10%
Filipendula ulmaria	Meadowsweet	20%
Iris pseudacorus	Yellow Flag	5%
Lythrum salicaria	Purple Loosestrife	5%
Eupatorium cannabinum	Hemp Agrimony	15%

Plants to be supplied as either plug plants or very small container-grown stock (0.5 litre capacity/90-120mm diameter). These are to be planted in single-species groups of 5-10 plants, and at a density of 15 plants per square metre.

All plants are to be planted on the floor of the swale and on the lower swale side slopes (gradient 1:3), within 1 metre horizontal distance of the edge of the floor of the swale.

The following species are to be concentrated within 10 metres of the edge of the inlet headwall spillway:

Phalaris arundinacea	Reed Canary-grass
Glyceria maxima	Reed Sweet-grass

Care should be taken not to compact the soil below the swale as this will reduce its capacity for infiltration.

Swale Establishment Maintenance Notes:

The swale should not receive any run-off until vegetation in the system is fully established and construction at the site has reached a state where sediment from the site will not cause siltation of the swale. This can be achieved by:

- Diverting flows until the vegetation is well rooted;
- Placing an erosion control blanket (e.g. jute, straw, or geosynthetic mats) over the freshly applied seed mix;
- Using bare earth as a temporary cover during the wet season. These areas should be seeded with the specified grass mix as soon as the weather is conducive to seed germination.

If more than 30% of the planted area is bare after four weeks from the completion of planting works, re-seeding or re-planting should be considered so as to achieve 90% coverage of the planted swale surface.

If sediment from construction work accumulates on a swale, it should be cleared, and the swale fully rehabilitated before the drainage system is adopted by the organisation responsible for carrying out the maintenance.

Note 3.

Filter Strip in SE Section of Site (Drainage Detail K)

Botanical Name	Common Name	Percentage (by number)
Phalaris arundinacea	Reed Canary-grass	60%
Filipendula ulmaria	Meadowsweet	30%
Lythrum salicaria	Purple Loosestrife	10%

Soil specification to be a manufactured engineering soil to achieve the required performance standards, to the engineer's specification, to ensure compliance with SAB provisions (Refer to engineering drawings). The surfaces of the batters or side slopes around bioretention systems should have at least 200 mm of topsoil on them. The topsoil should meet the requirements of BS 3882:2015.

Surface of the finished soil profile to be sown with Germinal A4 fescue-based grass seed mixture, which is tolerant of damp to wet conditions and periodic inundation. Sowing Rate: 20gms/m^2. No pre-seeding fertiliser to be applied.

Following germination of the seed mix - and once the sward has achieved a height of 50mm, following the first mowing and removal of all arisings - plant the following native herbaceous plant species, to address the amenity and biodiversity statutory standards (Sustainable Drainage System Standards for Wales S4 & S5) required by the SAB approach to drainage design:

Plants to be supplied as either plug plants or very small container-grown stock (0.5 litre capacity/90-120mm diameter). These are to be planted in single-species groups of 5-10 plants, and at a density of 15 plants per square metre.

All plants are to be planted on the floor of the filter strip and on the lower side slopes (gradient 1:3), within 1 metre horizontal distance of the edge of the floor of the filter strip.

Care should be taken not to compact the soil below the filter strip as this will reduce its capacity for infiltration.

Filter Strip Establishment Maintenance Notes:

The filter strip must be protected from stormwater flows until the vegetation in the system is fully established. This can be achieved by:

- Diverting run-off around the filter strip until the vegetation is established;
- Using pre-established turf or seeded mattresses;
- Covering the filter strip with clear plastic until the vegetation is well rooted;
- Placing an erosion control blanket over the freshly applied seed mix.

If more than 30% of the planted area is bare after four weeks from the completion of planting works, re-seeding or re-planting should be considered so as to achieve 90% coverage of the planted filter strip surface.

If sediment from construction work accumulates on a filter strip, it should be cleared, and the swale fully rehabilitated before the drainage system is adopted by the organisation responsible for carrying out the maintenance.

Note 4.

Amenity Area/Biodiversity Enhancement Planting

Terrestrial planting at grade into prepared topsoil.

Planting area to be excavated to an even depth of 500mm and backfilled with topsoil to BS 3882:2015.

Botanical Name	Common Name	Percentage (by number)
Alnus glutinosa	Common Alder	40%
Salix cinerea	Grey Willow	20%
Corylus avellana	Hazel	20%
Viburnum opulus	Guelder Rose	15%
Frangula alnus	Alder Buckthorn	5%

All plants to be supplied as cell-grown stock 300-450mm high and planted at 1.5 metre centres into prepared topsoil.

All plants to be planted in single-species groups of 3-9 plants.

Planting bed surface to be mulched with coarse grade forest bark mulch to an even depth of 75mm following the completion of planting works.

Post-Establishment Management & Maintenance of Bioretention Features

In September, once annually, the established vegetation in the swales and in the filter strip should be cut down to an even height of 100mm above the ground surface and all arisings removed to a green waste processing facility.

If the alien invasive species Himalayan balsam Impatiens glandulifera colonises the vegetation in the bioretention features, each plant should be removed by pulling-out by hand when flowering and before seed set.

Issue 1 June 2023 FOR PLANNING ONLY

John Campion Associates Ltd
Landscape Architecture * Landscape Planning * Urban Design
2 Redwood Drive, Clun Road, Aston on Clun, Nr.Craven Arms, Shropshire SY7 8EZ

Client	**GD Harries & Sons Ltd**		
Project	**Llandarcy Asphalt Plant - SAB Application**		
Drg.Title	**Landscape Treatment of Bioretention Features**		
Date	**June 2023**	**Scale:200 @ A0**	**Drg Nr:2214FESLS001**
Drawn	**JC/RKR**		**Issue: 01**

APPENDIX 09

Biodiversity Enhancement Plan

G D HARRIES & SONS LTD

FORMER EDWARDS SITE

BIODIVERSITY ENHANCEMENT PLAN

03 December 2021



Telephone:- 07969146776
e-mail:- davidrees@bayecology.co.uk

Bay Ecology was commissioned by Asbri Planning Ltd care of G. D. Harries & Sons Ltd to undertake an ecological appraisal of a parcel of land located at the Former Edwards Works located in Llandarcy on the 16th December 2020. The preliminary ecological appraisal was conducted to inform the proposed new asphalt plant.

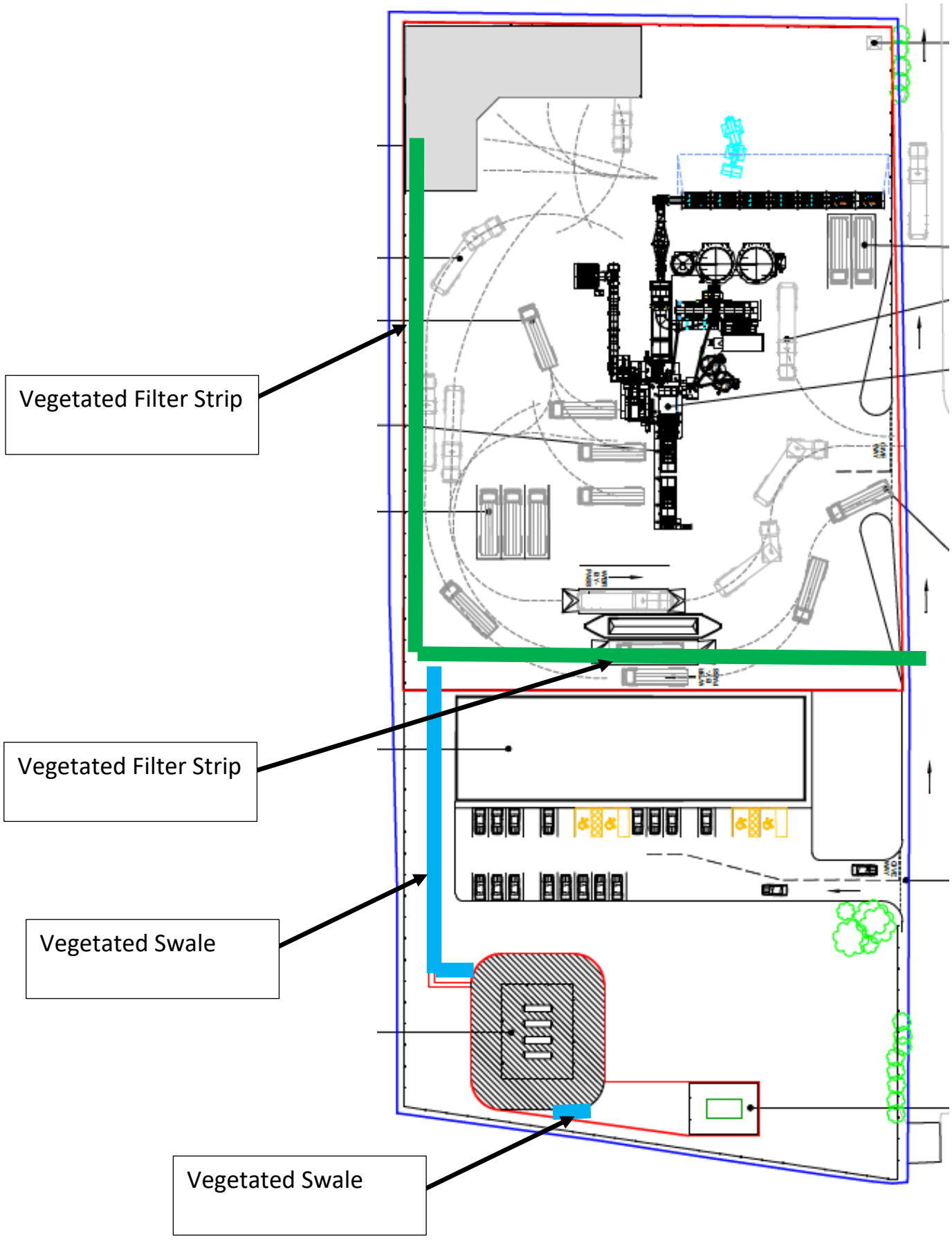
The field survey undertaken at the site identified a limited range of habitats dominated by hard standing with a narrow border of stone aggregate that was sporadically colonised by scrub species and poor semi improved grassland. In terms of the ecological importance of the site the hard standing was of negligible ecological value and represented the most suitable area of the site to support the asphalt plant development. The survey also identified that the Tennant Canal SINC was located the southern boundary of site, which links the Tennant Canal to the west and the Neath Estuary SINC located to the east. The boundary Canal is also designated as a NPT Water Courses SINC. The Red Jacket Fen SINC is also located to the west of site and the Tennant Canal.

A Sustainable Drainage Systems (SuDS) plan has been created to protect the boundary designations and to enhance the biodiversity around the margins of site (see plan below) that were formerly dominated by hard standing and of negligible ecological importance. The SuDS and biodiversity enhancement measures include the implantation of vegetated filter strips and wet swales/ wetland to provide a sufficient level of water quality treatment to prevent pollution entering the adjacent waterbodies. However, the appropriating seeding of the SuDS features will enhance the existing habitats within the site and complement any neighbouring habitats. The filter strip and wet swale/ wetland will be planted with native species of varying heights to provide a range of habitats across the site, to encourage local habitat creation.

The filter strip and wet swale will be lined with low nutrient soil to encourage a diverse botanical range. The features will be seeded with a wet meadow seed mix which will be supplemented with reed, rush and sedge plug planting to provide a variety of sward height and to further clean and treat surface water.

It is recommended that the sown grassland within the features are mown once a year to encourage wildflower development at the end of the growing season in September and the cuttings removed from the site; whilst the features are inspected twice a year for signs of erosion damage, silt deposits, excessive waterlogging and poor vegetation growth.

Biodiversity Enhancement Plan



APPENDIX 10

Environmental Method Statement and Site Environmental Plan

and

Environmental Risk Assessment Plan

ENVIRONMENTAL METHOD STATEMENT AND SITE ENVIRONMENTAL PLAN

Introduction

GD Harries Limited as a company operate an accredited Environmental Management System to ISO 14001.
All works conducted on this site will be carried out in accordance with the company management system, the company Policy Statement on Environmental Management and the Environmental Handbook contained within the System Manual.

The company recognises the Environmental Benefits of improved environmental performance as: -
Reduced damage to our natural environment
Reduced demand for natural resources
Reduced disturbance to our neighbours

The company also recognises the economic benefits of improved environmental performance and recognises that.

"Preventing pollution is cheaper than curing it"

The site plan that follows is set out under the following headings: -

1. Management

1.1. Dealing with regulatory agencies
1.2. Management responsibilities
1.3. Management of sub-contractors
1.4. Raising awareness.
1.5. Liaising with client and designers

2. Site Set Up

2.1. Management and Site Control
2.2. Public Relations
2.3. Site Security
2.4. Storage of Fuels and Oils
2.5. Managing Materials
2.6. Traffic and Access Routes
2.7. Site Clearance following Completion

3. Environmental Issues

There is a stream bordering the brownfield site, the Red Jacket Pill, so measures will be put in place to prevent silt and other pollutants from entering the stream.

4. Site Specific Environmental Issues & Risk Assessments

4.1. Management
4.2. Dealing with Regulatory Agencies

The following table sets out the Regulators likely to be involved in the project and their responsibility: -

Regulator	Responsibility
Neath Port Talbot Borough Council	Noise, Air Quality, Traffic, Nuisance, Planning issues
NRW Tel 0300 065 3000	Effluent Discharge, Abstraction Licences. Surface Water Discharge to river. Waste Treatment & Disposal
Health and Safety Executive	Health and Safety Issues

All staff will follow the guidelines listed here to help ensure efficient and effective management of environmental issues.

1. Plan ahead. Try to avoid problems and give regulators advance warning of potential problems.

2. Give regulators the time needed to process any enquiries.

3. Display the relevant emergency number for the regulatory agencies. Include in Construction Stage Health and Safety Plan and put on the site notice board.

4. Ensure that all site personnel know the correct procedures for reporting incidents – they should let the site manager know before contacting the regulatory agencies.

5. Always notify the Environment Agency and the Local Authority of any uncontrolled contaminating spillages. (EA Incident Hotline Tel No 0300 065 3000)

4.3. Management Responsibilities

Management responsibilities for company personnel are set out in the Company's Environmental Management System.

The Project Manage has responsibility for the environmental management of the project.

The Project Manager will delegate certain responsibilities for the day to day management to members of his site team.

These responsibilities will include auditing environmental practice on site, liaising with regulatory authorities and monitoring sub-contractors.

The Company Health and Safety Manager, Kirsty Fraser will make regular visits to site to check Health and Safety performance and will include Environmental issues in her brief.

Site Engineers and Site Foremen are usually in the best position to put the project environmental plan into practice and as such the project manager will ensure that engineers and foremen understand the environmental obligations and the practical measures needed to comply with them.

4.4. Management of Sub-Contractors

The Project Manager will ensure that all Sub-Contractors understand their obligations towards the environment and meet them.

To achieve this, the Project Manager will ensure the following: -

Sub-contractors are made aware of the approach to environmental management on site before starting work.

Sub-contractors are involved in environmental training toolbox talks sessions and included at environmental induction.

Sub-contractors are made aware of the environmental obligations of the project.

The past record on environmental performance is checked prior to appointment and that proper controls are included in their sub-contracts to ensure conformance with all reasonable requirements with regard to the environment, and encouragement to achieve good environmental performance.

4.5. Raising Awareness

Raising Awareness amongst all staff, operatives and sub-contractors will be achieved by the following means: -

1. All personnel working on site will be required to attend an Environmental Induction (this will be part of the general site induction)

2. A series of Tool Box Talks will be held at regular intervals. The tool box talks will be based on the text included in the Construction Confederation Tool Box Talks Series.

   Tool Box Talks 1 – 18

   1. Spill Control
   2. Water Pollution Prevention
   3. Dust & Air Quality
   4. Noise & Vibration
   5. Water Pollution - Silt

6. Water Pollution – Cement & Concrete
7. Tree Protection
8. Waste Management – Reduce / Reuse / Recycle
9. Storage of Waste
10. Japanese Knotweed
11. Himalayan Balsam
12. Giant Hogweed
13. Storage & Use of Petrol
14. Material Handling & Housekeeping
15. Archaeology
16. Bentonite
17. Pumping & Over pumping
18. Washing Down Plant & Machinery

4.6. Liaising with Client and Designers

In regular meetings with the client and designers' environmental issues affecting the design will be raised and discussed.

Alternative approaches and alterations to the design may be required where environmental improvements can be achieved, and these will be discussed and agreed with the client and designers as the works proceed.

5. SITE SET UP

5.1. Management and Site Control

The Project Manager will have ultimate responsibility to ensure that site personnel understand that environmental issues must be taken seriously. In conjunction with the site foreman this will be achieved through a combination of setting a good example, rewarding good practice and punishing poor practice.

The following will used as a check list to ensure that the proper site control is being exercised.

Have environmental responsibilities been defined?

Is everyone on site, aware of their responsibilities and liabilities?

Are all environmental standards and obligations clearly defined?

Have the standards been brought to the attention of all concerned?

If training is necessary has a training programme been established (site induction and tool box talks).

Are environmental awareness posters/bulletins displayed? Are warning signs displayed prominently on site? Is the company environmental policy displayed? Is the Company Environmental Management System Manual readily available?

Voluntary Code of Practice, which seeks to: -

- Minimise any disturbance or negative impact (in terms of noise, dust and inconvenience) caused by the construction site to the immediate neighbourhood.

- Eradicate offensive behaviour and language from construction sites.

- Recognise and reward the contractor's commitment to raise standards of site management, safety and environmental awareness beyond statutory duties.

Good Housekeeping

Good housekeeping is an important part of good environmental practices and it helps everyone to maintain a safe and efficient site. The site should be tidy, secure and have clear access routes that are well signposted.

- Segregate and control waste as it is produced and remove waste frequently from the site.
- Keep the site tidy and clean.

- Ensure that material and plant storage areas are properly managed.
- Keep fencing tidy – repair them and repaint them when necessary, remove any flyposting.
- Frequently brush-clean the wheel-washing facilities.

5.2. Public Relations

GD Harries recognises that in order to complete the project with the minimum of disturbance to neighbours, good public relations is vital.

These arrangements are however based on the principles outlined below: -

- Visit occupants of neighbouring businesses and keep them informed of progress.

- Display a contact board at the site perimeter so that the neighbours and members of the public know who to contact if they have a complaint or a comment to make. Use this board to display information on the phasing and other relevant matters

- When complaints arise deal with them quickly and in accordance with a defined complaints procedure. Create a log of complaints.

- Provide a position so that passers-by can observe activities on site.

- Be able to identify your neighbours and understand their views.

5.3. Site Security

Site security arrangements are set out in a separate method statement. Heras fencing will be provided to prevent access from the perimeter of the site.

These arrangements have been set up as a result of considering the following: -

Site security is an important component of good environmental management. Vandals often cause damage that harms the environment by: -

- Opening taps on tanks containing fuel.
- Tipping out other liquids from drums and containers.
- Smashing/stealing raw materials.
- Playing on plant.
- Spraying graffiti or flyposting on site hoardings.
- Destroying works in progress

Help to reduce vandalism by securing the site, and moving valuable items and those prone to theft from public view. Store these goods in a locked container or storage area.

The following rules and examples of good practice will also be implemented to further improve security.

- Avoid stacking materials against the site boundary or fence as this may help vandals and thieves to scale it.

- Within the site ensure that materials that are potentially hazardous to the environment are well secured. Lock fuel outlets when not in use.

- Secure plant to prevent vandalism.

- Immobilise plant and equipment overnight.

- Install deterrents such as lights, warning notices, consider 24-hour security guards and alarm systems if found to necessary.

- Control the movement of people on and off site by using site passes.

- Position the Project Manager's office to give a good view of the site.

- Inform local police about the site and seek their advice on security.

5.4. Storage of Fuels and Oils

The following measures will be adopted: -

Storing Oils, Fuels and Chemicals

- Securely store all containers that contain potential pollutants (e.g. fuels, oils and chemicals).

- Clearly label containers so that appropriate remedial action can be taken in the event of a spillage.

- Regularly check taps and hoses for leakage.

- Avoid storing drums tightly against each other – store drums so that they can all be inspected for leaks.

- Prevent damage from vandalism. Ensure that all valves and trigger guns are vandal and tamper proof.

- Clearly mark the contents of any tank, and display a notice that demands that valves and trigger guns are locked when not in use.

- Store tanks or drums in a secure bunded container or compound that is locked when not in use.

- Provide separate fill pipes for each tank unless the tanks are interconnected by a balance pipe of greater flow capacity than the fill pipe.

- Mark fill pipes with product type and tank numbers where there is more than one tank.
- Before moving a drum, check the bung is secure.

Bunding Tanks

- To avoid accidental spillage, bunded tanks will be used with a minimum capacity of 110% of the volume of the largest tank.
- Do not let bunded areas remain filled with rainwater or slops (ideally, provide a cover).
- Position tanks away from vehicle movements and mark them clearly so that they are visible and so that people know they are a potential risk.
- Do not put tanks where there is a direct link to surface watercourses or sewers.
- Avoid placing tanks on unmade ground to reduce the risk of contaminating the soil.
- Protect from vandalism.
- The bund will be impermeable to the substance that is being stored in the tank.
- Position air vent pipes so that they can be seen easily directed so that any discharge (eg in the event of the tank being overfilled) is directed into the bund.
- Fill points should be inside the bund.
- Fit any pump sited outside the bund with a non-return/check valve installed in the feed line.

Refuelling Protocol

- Designate bunded refuelling areas.
- Do not use remote fill points or refuelling close to watercourses. Where this is unavoidable, keep materials such as absorbent pads or booms readily available in case of spillage.
- All refuelling must be supervised. Do not leave valves open unattended.
- Keep an emergency spill kit at the refuelling point.
- Ensure that personnel carrying out refuelling are aware of the protocol and know what actions to take in an emergency.

5.5. Managing Materials

The following will be adopted: -

Ordering and receiving deliveries

- Order the right quantity and quality of materials to arrive at the time when they are needed. This reduces the length of time materials have to be stored on site and therefore reduces the potential for damage or theft to occur.

- When ordering, find out in what form the materials will be delivered, so that the appropriate unloading plant can be arranged.

- After placing an order, check the arrangements for handling and storing materials as soon as they arrive on site.

- Arrange for deliveries to be received by a member of site personnel who is able to supervise the delivery, carry out a quality inspection and ensure that the materials are unloaded to the appropriate place.

Storage

There will be a combination of central storage and workplace storage used on site, the balance between them will depend on the works in progress. It is important to manage storage areas well because they set an example for the site. Keep the following points in mind: -

- Ensure that the material suppliers' instructions on storage are being followed
- Store materials that are valuable or attractive to thieves in a secure area.
- Store materials away from waste storage containers and from vehicle movements that could cause accidental damage.
- Secure lightweight materials to protect them from wind damage or loss.
- Take special; care over the storage of materials that are potentially polluting.

Handling

There are many methods of moving materials around site. Options include cranes, trucks, forklifts and even manual handling. Ensure that the suppliers' instructions on handling their materials are followed to minimise damage to materials and injury to site personnel.

5.6. Waste Management

Duty of Care

All those who produce or handle wastes from demolition, earthworks and construction activities have legal responsibilities – Duty of Care – for its safe keeping, transport and subsequent recovery or disposal. Failure to comply can result in an unlimited fine.

We will ensure that licensed waste carriers are used and that disposal is at licensed sites.
Before surplus material is removed from site WAC testing will take place to allow the waste carrier and licenced tip to understand what they are receiving.
Segregated skips will be used on site. All waste will be logged onto the site waste management plan.
Surplus COSHH material or the empty cans will be stored in airtight barrels on site. They will be removed by the licensed waste carrier.

Filling in the Paperwork

A written description of the waste and a transfer note must be filled in and signed by both parties involved in the transfer. Repeated transfers of the same type of waste between the same parties can be covered by the one transfer note for up to one year.

The transfer note must include:

- What the waste is, how much there is and its waste code.
- What sort of containers it is in.
- The time, date and place the waste was transferred.
- The names and addresses of both persons involved in the transfer.
- Details of which category of authorised person each one is e.g. producer, registered waste carrier, waste licence holder.
- A copy of the waste management licence, the licence number of the facility.
- Where appropriate, the name and address of any broker involved in the transfer of waste.
- Signed by both parties and transfer notes kept for two years.

Checking

- If we are dealing with hazardous wastes, such as asbestos, chemicals, oils or contaminated soils, we will have extra legal responsibilities and may be required to complete detailed waste transfer consignment notes. If unsure, check with the local Environmental Agency office: **0300 065 3000**.
- Check the registration certificate of the waste carrier before handing over the waste. This can be an A4-sized colour certificate (photocopies are not sufficient) or one that looks like a credit card. Both have security features built it.
- Check with your waste carrier where the waste is being taken and make sure the destination is authorised to receive it. If in doubt, check with the Environment Agency **0300 065 3000**. For difficult or bulky wastes, it may be appropriate to check that the waste wagons have actually delivered to the intended site.
- Be alert to any evidence or suspicion that demolition, earthworks or construction waste is being dealt with illegally. If you have any suspicions that someone is

handling waste illegally or using an unauthorised disposal site, contact the hotline number **0300 065 3000**.

What is waste?

Waste is defined as:
Any substance or object that you discard, intend to discard, or are required to discard is waste and as such is subject to a number of regulatory requirements. The term 'discard' has a special meaning. Even if material is sent for recycling or undergoes treatment in-house, it can still be waste.
Whether or not a particular material is waste is for the person producing it to decide in accordance with the law.

5.7. Traffic and Access Routes

Road markings will show the traffic route for vehicles to follow within the site. Entry and access into the site will be through the same gates.

The following rules and examples of good practice will also apply:-

- When ordering deliveries, ensure that all drivers are aware of traffic restrictions at and around the site.

- Arrange deliveries to site so that vehicles can go straight in without having to queue outside the site boundary.

- Instruct drivers to switch off engines when vehicles are waiting.

- Parking for site personnel's vehicles is in the designated parking area on site.

5.8. Site Clearance Following Completion

This is a phase of the works that usually receives little attention, but it can cause the most problems. In clearing the site it is vital that wastes are managed in accordance with the regulations. On completion of the works, the contractor will clear away and remove from the site all plant, surplus materials, rubbish and temporary works. The whole of the site and works will be left clean.

6. Construction Methods

6.1. Details of the Extent and Phasing of the Development.

The project will occupy the whole of the area detailed on the plan Appendix A. Within the red line area an asphalt plant, aggregate building, weigh-bridge and control cabin will be located. Within the yellow line area car parking, gas storage and water treatment structures will be located. In general the planning works are to be completed by July 23, and construction is anticipated to commence in July with commissioning of the plant in December 2023.

The existing yard will be occupied as at present, using the existing fully serviced offices, and perimeter security fence, (repaired where necessary), with controlled entry and exit gates to ensure no unauthorised access. During periods when no operatives are on site a remote CCTV system will operate.

6.2. Construction Materials

The asphalt plant will be a steel structure painted Goosewing grey, RAL 080 70 05. BS10A05

The aggregate storage building will be a steel framed structure clad in steel profile sheeting again goosewing grey in colour.

Foundations for the main structures will be reinforced concrete ground slabs. The Aggregate Building will sit on a lego block wall.

The north end of the plot adjacent the aggregates storage building will be a reinforced concrete yard, elsewhere there will be a macadam surface.

A vegetated swale will be laid along the western boundary with slotted channel drains running west to east across the yard to permit surface water drainage. The slotted channels will pass through silt trap catchpits prior to entering the swale drainage system. The swale will issue into a 450mm dia pipe, and pass to a flow control chamber, prior to entering a Class 1 Bypass Interceptor. It will then flow into a further shallow swale lined with sedges and rushes before discharging through a sampling chamber and thence into Red Pill on the southern boundary.

6.3. Deliveries and Storage

Deliveries will be directed along the B4290 from the M4 Junction 41, and into Edwards Yard. They will approach the site using the one- way system and contact the site foreman who will arrange access. On site the delivery vehicles will be directed to the appropriate location for unloading with a banksman present should any reversing movements be necessary. Unloading for most deliveries will utilise the site telehandler operated by an approved operator. For larger elements such as the asphalt plant and aggregates building a crane will be operational under strict Permit to Lift protocols involving lift supervisors and lift plans.

Storage of non – inflammable dry goods will be within one of the two garage buildings on site. Plant and equipment when not in use will also be parked within these covered areas.

Storage of hazardous substances will be within a Coshh Store.

Storage of fuel will be in a fully compliant bunded locked bunker.

6.4. Waste and Contaminated Land.

The proposed site surface levels have been designed such that all excavated material will be reused to raise the level of the North end of the site to ensure surface falls towards the western and southern boundaries. From the borehole evidence the material is likely to be slag in origin.

Once excavated material has been placed and compacted to the final profile the surface will be covered with a warning membrane, and then covered with at least 100mm of planned tarmacadam or crushed concrete recovered from the original site surface. Concrete foundation slabs required for the new asphalt plant, new aggregates building, and yard areas will be left exposed as an impermeable finish. All other surfaces (apart from the Swale), within the red line development boundary will be surfaced with asphalt.

7. General Site Management

7.1. Construction Programme.

The proposed construction programme is detailed in Appendix B attached. Basically, the period from now to the end of July will be the planning approval stage, followed by construction from July to December 23 before becoming operational. During the planning stage, water quality monitoring and a ground radar survey will be undertaken, as well as some elements of site clearance prior to the bird nesting season.

7.2. Site Clearance

The removal of the colonising scrub/tall ruderal species found within the perimeter hardcore of the site will be grubbed up and stockpiled for regrading adjacent to the Red Jacket Pill.

The existing concrete slab surfaces will be broken up and crushed for reuse as capping material. Th existing tarmacadam surfacing will be planned out and again stockpiled for reuse as capping material.

7.3. Construction Drainage

A fully designed Suds drainage system will be prepared and presented by SLR. A new discharge pipe of 450mm dia. into Red Pill will be constructed, with an appropriate precast concrete headwall and flap valve. A sampling chamber will be constructed within the site to enable weekly sampling of the outfall water for turbidity monitoring.

The discharge pipe will drain a shallow swale that will run along the Southern boundary of the site. It will be planted with sedges and reeds to provide further filtration for the surface run off.

Upstream of the swale will be a Class 1. Bypass separator and a flow control chamber, and the pipe will drain a further shallow swale constructed along the western boundary fence.

Two runs of slotted drains will run across the site west to east and local contouring will ensure all surface water drains into these. Before issuing into the eastern swale the drains will pass through silt trap chambers to remove the majority of suspended solids.

These chambers will be cleaned out regularly as part of the routine maintenance cycle.

7.4. Sensitive receptors

Ground Water. Prior to any construction the outfall water will be tested to ascertain current contamination levels. During the construction and manufacturing phases, regular monitoring will be undertaken to ensure contamination levels remain similar to present levels. The surface of the asphalt yard will be sealed with an impermeable surface of either reinforced concrete or asphalt thereby mitigating possible contamination of the ground water by plant processes.

During construction and once operational the surface water run - off will be monitored weekly at the Red Pill outlet to ensure turbidity levels remain within permitted tolerances.

Noise monitoring equipment will be retained on site to check levels during the construction phase, with operations and equipment monitored to ensure compliance with acceptable noise levels. During commissioning of the plant a Noise Impact Assessment will be undertaken which will result in the production of a Noise Management Plan to be implemented prior to the commencement of regular production of asphalt. Typical noise levels of the proposed plant in operation are attached in Appendix C.

Vibration monitoring will be undertaken by specialist service providers during commissioning and running of the asphalt plant. Emissions from the stack will also be regularly monitored by the built - in sensors.

8. Control of Nuisances

8.1. Construction Nuisance

No piling works are required on the scheme.

Standard construction equipment, eg. tracked excavators, rollers, telehandlers, mobile cranes, Mewps and dumpers compliant with current regulations will be utilised. Spill kits will be available on all mobile plant, with spill trays or bunds provided for static plant.

No materials other than domestic rubbish will be transported off site.

Vibrations arising from demolition hammers breaking up existing concrete hard-standings, and vibratory rollers compacting the site generated fill, will be monitored by Site Staff. If noise levels are excessive as established by noise assessment surveys, then alternative demolition and compaction methods will be utilised.

9. Traffic Management

9.1. Construction Phase TM

The Construction Phase Traffic Management Plan will be as described in Section 6.3. above. No wheel wash facilities are envisaged as all surplus materials will be reused on site.

9.2. Operational Phase

When the plant becomes operational the proposed traffic flows have been detailed on Drg detailed in Appendix D.

All HGV delivery and collection vehicles will access the site through the north gate along the eastern boundary, (except for those detailed in 6 below). The automated gated access into

the plant will be controlled from the weighbridge pod past which all vehicles will be directed. Vehicles collecting asphalt products will then be required to park up until called under the plant to load, once filled they will return to the weighbridge to complete the necessary weighing and administration before leaving the plant and exiting the site through the one way system. No drivers will need to leave their vehicles unless within the dedicated sheeting area. Road Markings and signage will guide vehicles through the plant.

Vehicles delivering aggregates and bitumen will again pass the weighbridge on entering the plant, but once discharged will exit directly.

9.3. Site Employees and construction workers.

Personnel employed at the plant, (including construction staff),administrators, weighbridge and plant operators, and mechanics will enter through the South gate along the eastern boundary and park their cars in designated places within.

The only HGV vehicles permitted through the south gate will be either to enter the workshops, or deliveries of Calor Gas to the storage facility.

9.4. Visitors

Visitors will be directed to the south access and have dedicated parking facilities in the parking area, with a clearly marked footway to the reception area.

10. Site Hours

10.1. Construction Phase

During the construction phase Normal site hours will be from 7.30am until 17.30pm Monday to Friday and possibly Saturday 7.30 until 4.00pm.

10.2. Operational Phase.

The plant will normally commence operations at 5.00am and complete production by 5.00pm, however surfacing requirements for the M4 motorway and other traffic sensitive areas will require asphalt supplies out of hours, sometimes requiring the plant to be operational throughout the night, including weekends.

11. Biodiversity Management

11.1. Enhancement Plan

Please see the Biodiversity Enhancement Plan and timetable in appendix E.

11.2. Landscaping and Planting.

The Larch Group will produce a comprehensive Planting and Design spec. for the flora to be established on the two swales forming part of the Suds Drainage system.

12.Soil Management

12.1. Topsoil

Topsoil to be stripped along the southern boundary to accommodate the swale construction will be carefully excavated and stockpiled under the guidance of the site ecologist. The soil will be reused within the final surface of the swale. The existing flora within the area will be enhanced with the addition of reeds and sedges to assist with filtration.

12.2. Site arisings.

Arisings from the foundation excavations, drainage, and duct installations will be deposited and regraded at the north end of the plant to raise the site levels to comply with flooding regulation requirements and assist with falls to aid surface drainage. See drawing in appendix F. A ramp will be constructed to access the aggregate bins on the plant. This ramp will be formed by a concrete retaining structure filled with compacted site arisings.

13. Resource Management

13.1. Fuel Storage

Derv and AdBlue bunded tanks will be positioned on site where accessible to HGV vehicles with adequate protection against accidental impact. Spill kits and Emergency Containment Equipment will be maintained on site and personnel trained in their use as detailed within the Pollution Response Plan produced in compliance with GGP 2.

13.2. Chemical Storage

The asphalt plant has 3 large storage units holding bitumen and PMB, all of which are fully bunded. Protection against accidental impact will be provided by enclosing them with Armco traffic barriers. Any other hazardous chemicals necessary for the Plant operation will be retained within the coshh store on site, with access to products strictly controlled.

13.3. Waste Management

Any surplus products arising out of the plant's use, or product returns from customers will whenever possible be recycled and used in the WRAP system. Surplus aggregate products will be taken to a licensed recycling facility.

13.4. Water Resource

Roof water from the aggregate storage building will be collected and stored in a large 6000 litre tank, from where it will be utilised as wash - down water around the plant. A mains supply back up is already present on site.

13.5. Solar Panels

Solar panel systems will be placed on the roofs of the aggregate storage building and the existing garage building and be connected to the site electrical systems.

13.6. Energy Consumption

The plant will be electrically operated requiring a new site supply to be installed by National Grid, together with a new site electric sub station. The aggregates drier on the plant will be gas fired with Calor Gas tanks to be erected on site as detailed on plan in Appendix A.

14. Pollution Prevention

14.1. Environmental Responsibilities

GD Harries acknowledges and strives to adopt the good environmental practices as detailed in GPP1 (Guidelines for Pollution Prevention).

14.2. Above ground oil storage.

The site will follow the guidelines detailed in GPP2 with prevention methods designed to break the Source/pathway/Receptor sequence.

14.3. Drainage pollution

The works adjacent to Red Pill will follow the guidance detailed in GPP 5.

14.4. General Construction Site

During the planning stage of the contract the principles set out in PPG 6 will be followed viz:-

Know the Risks, Prepare for Pollution Prevention, Site security, and Communication, and these will be transferred by the induction process to site staff and operatives.

14.5. Storage Drums and containers

Asphalt Additive Products supplied in IPC's will be stored in accordance with the guidelines detailed in GPP 26. A pollution Incident Plan will be prepared for each product along with the coshh sheet and the appropriate spill kit will be kept on site.

15. Responsible Persons

15.1. Organogram

Aa organogram of the personnel that will be involved in the construction phase of the project is included in Appendix F.

16. Environmental Issues

We will follow best practice for controlling environmental issues on site.

16.1. Site Set Up

16.1.1. Deliveries will be made to a materials and stores area established on the site furthest from the nearby stream, the Red Jacket Pill.

16.1.2. A one way system will be established for all site vehicles.

16.1.3. Fuel storage and COSHH storage areas will be established within the stores area.

16.1.3.1. Spill kits will be available at these locations.

16.1.4. A 10mph speed limit will be posted and enforced on site.

16.1.5. "Enviropad" spill mats will be used instead of drip trays to remove the problem of polluted ponding water sitting in drip trays.



16.2. Site Drainage

16.2.1. A vegetation corridor will be left between the site and the river to act as a buffer to prevent silt entering the stream.

16.2.2. Cut off ditches will be established around the perimeter of the construction site to intercept run-off.

16.2.3. Water from excavations will be pumped through silt bags into grassy areas well away from the river.

16.2.4. Plant and wheel washing will be carried out in a designated area at least 10m from the river.

16.2.4.1. Run-off will be collected in a small settlement pond.

16.2.5. All drainage will be identified on site before work starts and clean and dirty water kept separate.

16.2.5.1. Existing gullies and manhole covers will be highlighted and silt and chemicals kept away from these potential outlets.

16.2.6. An incident plan will be established and communicated to the site team.

16.2.7. A daily recorded site inspection will be undertaken looking for any signs of silt or other pollutants reaching the watercourse.

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16.3. Excavations

16.3.1. The construction site is brownfield area the site team will be briefed on what to look out for and what to do if contamination is found.

16.3.2. Water samples will be taken from water generated during excavations to check for contaminants.

16.3.3. Water from excavations will be controlled by sumps within the excavations; small settlement ponds; and pumped via silt bags into grassed areas and vegetation corridors.

16.4. Material Storage

16.4.1. Stockpiles will be located away from watercourses, gullies and manholes.

16.4.2. Stockpiles will have cut off ditches excavated around the perimeter of the base

16.4.3. Stockpiles will be kept below the height of the site boundary

16.4.4. Enclosed segregated skips will be provided to dispose of packaging.

16.5. Oil Use, Storage and Refuelling

16.5.1. The oil will be stored within the segregated area within the stores compound.

16.5.2. The storage area will be a minimum of 10m from watercourses and drainage.

16.5.3. Fuel will be kept in double bunded and locked purpose made tanks.

16.5.4. An earth bunded area will established for the fuel tank.

16.5.4.1. The bunded area will be lined with impermeable membrane (dpm).

16.5.5. Oil drums and containers will be kept in a bunded COSHH stores.

16.5.6. A spill kit will be kept at the stores near the fuel area.

16.5.7. Drip mays will be used during refuelling.

16.5.8. Refuelling will only take place within the storage area.

16.5.9. All fuel stores will be lockable and secured when not in use.

16.5.10. A fuel log will be kept to monitor fuel usage and to spot any potential leaks.

16.5.11. Inspection of the storage areas and the containers will be part of the documented weekly site inspection.

16.5.12. An emergency response plan will be made for site and the site team drilled on how to deal with a fuel spill.

16.6. Nuisance

16.6.1. There will be a water bowser on site for dust suppression when needed.
16.6.2. Noise will be controlled by limiting the site hours.
16.6.2.1. Neighbouring properties are commercial premises.
16.6.3. Work will be undertaken during hours of daylight.
16.6.3.1. Lighting for stores and office compounds will be directed away from the site perimeter.
16.6.4. Segregated covered skips will be used to prevent vermin.
16.6.5. Daily plant check sheets will be completed before using plant every morning and any issues reported immediately so that faults can be fixed.
16.6.5.1. This will limit noise and smoke pollution from items of plant.

16.7. Cement, Concrete and Grout.

16.7.1. Bagged cementitious products will be kept within storage containers to keep them dry.
16.7.2. Portable mixers, concrete lorry chutes, shovels will be washed out in the designated concrete washout area on site.
16.7.2.1. A lined and covered skip will be used.
16.7.2.2. Solids will be removed frequently.
16.7.3. Tool box talk for the site team to make them aware that cement, grout or concrete washings are not to enter surface water or drains.

16.8. Land Contamination and Invasive Plants

16.8.1. Work will be undertaken to an agreed strategy advised by a specialist in the treatment of contaminated land.
16.8.2. Any suspicious materials or smells uncovered during excavation will be reported to site management immediately.
16.8.2.1. The area will be barriered until investigations are complete.
16.8.3. The site will be surveyed for invasive species such as Japanese Knotweed, Himalayan Balsam, and Giant Hogweed.
16.8.3.1. These areas will be fenced off to prevent construction activities disturbing the area.
16.8.3.2. Specialist contractors advice will be sought for the treatment or removal of the plant.

16.9. Chemicals and Hazardous Substances

16.9.1. Chemicals and hazardous substances will be stored in bunded COSHH stores,
16.9.2. A COSHH register will be in place for the products kept on site.
16.9.2.1. Safety data sheets are available.
16.9.2.2. The site team will be briefed on the storage and handling of these materials.
16.9.2.3. Emergency plans will be developed within each products COSHH register.
16.9.3. Spill kits available at stores area.
16.9.4. Site team will be trained on the use of spill kits.

16.10. Waste Management.

16.10.1. Store your waste safely and securely on site e.g. prevent windblown materials such as plastics leaving site.

16.10.1.1. Covered skips and bins will assist this

16.10.2. Prevent any liquid wastes leaching from bins or skips – this includes dry wastes that may become wet, e.g. through exposure to rain.

16.10.3. Develop a site procedure for selecting and managing waste contractors, those that remove your waste, to ensure that you meet your duty of care requirements

16.10.4. Have appropriate duty of care documentation, i.e. completed waste transfer notes or consignment notes for hazardous waste for each load of waste removed from the site

16.10.5. Prevent hazardous wastes being mixed with other hazardous wastes or non-hazardous wastes

16.10.6. Keep all waste transfer notes and consignment notes for 2 and 3 years respectively.

16.10.7. A Site Waste Management Plans (SWMP) will be used to help comply with most waste legislation and reduce the amount of waste generated.

16.10.8. Ensure materials aren't over-ordered to avoid waste in the first place.

16.10.9. Lock waste storage areas, bins and skips.

16.10.10. Perform checks on end disposal of waste to satisfy yourself that your contractors are complying with legislation and record your findings.

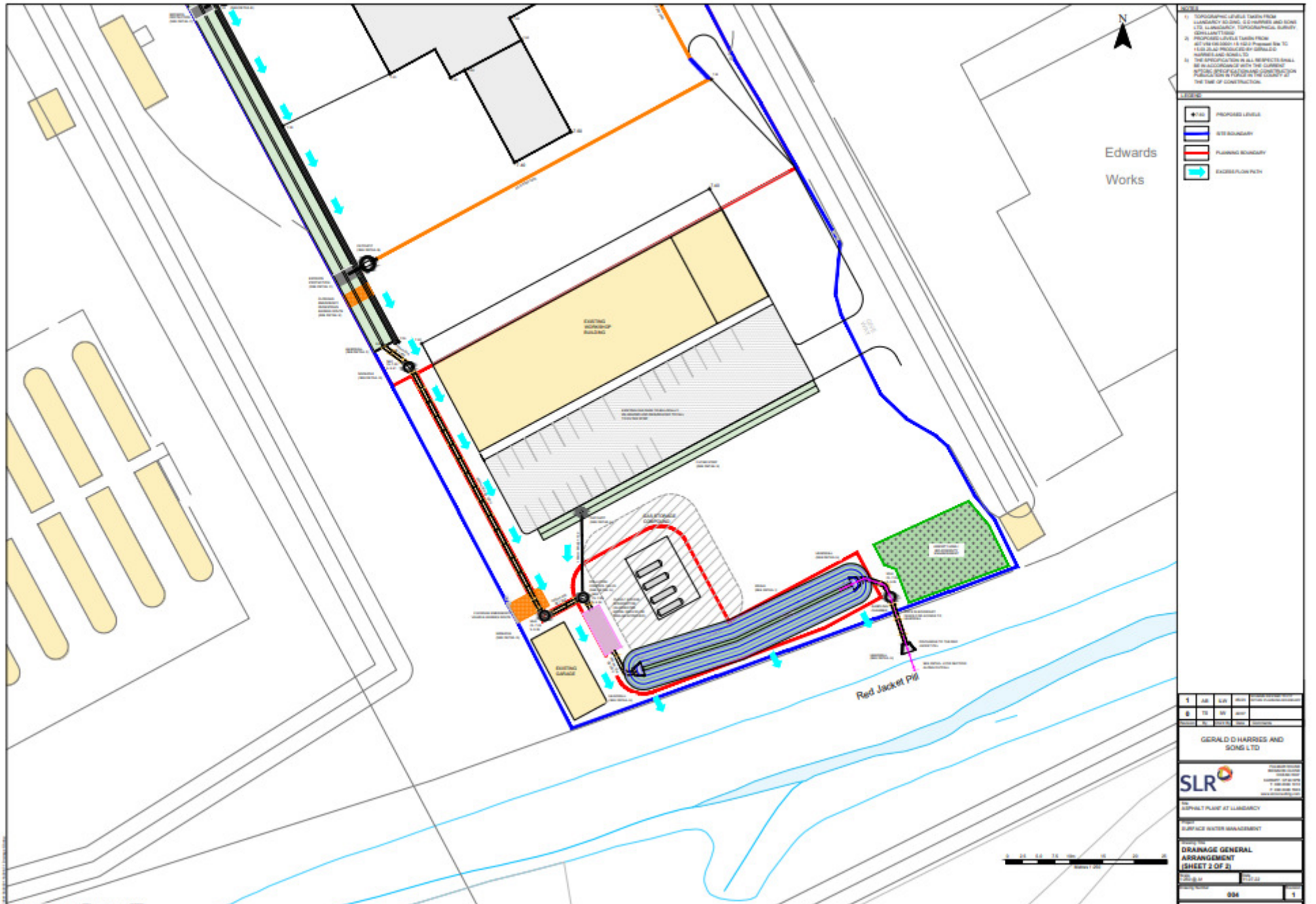
17. Site Specific Environmental Issues and Risk Assessments

Site specific Environmental Issues have been identified and noted in the attached Environmental Risk Assessment.

The results of this Risk Assessment will form part of the Site Environmental Plan. Any additional monitoring Procedures required (i.e. in addition to those included in Section 3) should be scheduled here.

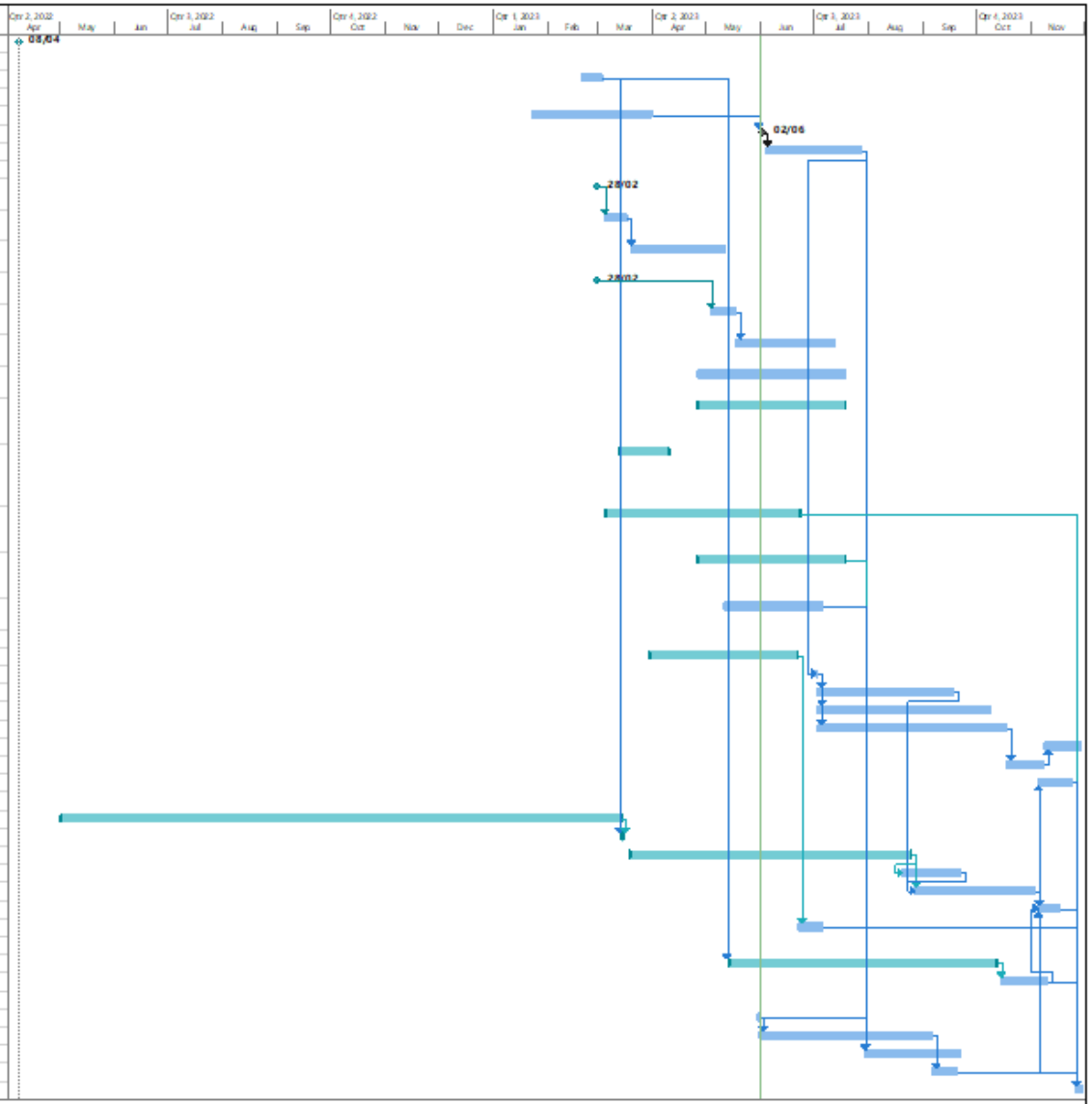
Appendix A


COVERED AGGREGATE BAYS
ASPHALT PLANT FOUNDATION SLAB
EXISTING WORKSHOP BUILDING
N
NOTES
1) TOPOGRAPHIC LEVELS TAKEN FROM LLANDARCY SO DNG. G D HARRIES AND SONS LTD, LLANDARCY. TOPOGRAPHICAL SURVEY. DDH-LAN1T1-0002
2) PROPOSED LEVELS TAKEN FROM 407-VN-095-00001-1 R 102-3 Proposed Site TC 1 0.01.25.dgn PRODUCED BY SIRRAL0 G HARRIES AND SONS L TD
3) THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT WORKS SPECIFICATION AND CONSTRUCTION PUBLICATION IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.
LEGEND
PROPOSED LEVELS
SITE BOUNDARY
APPLICATION BOUNDARY
EXCESS FLOW PATH
GERALD D HARRIES AND SONS LTD
SLR
ASPHALT PLANT AT LLANDARCY
SURFACE WATER MANAGEMENT
DRAINAGE GENERAL ARRANGEMENT (SHEET 1 OF 2)
003
1


N
Edwards
Works
Red Jacket Pit
GERALD D HARRIES AND SONS LTD
SLR
DRAINAGE GENERAL ARRANGEMENT (SHEET 2 OF 2)

Appendix B

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		planning consent issued	0 days	Fri 08/04/22	Fri 08/04/22		
2		**LEASE**					
3		sign lease	10 days	Mon 20/02/23	Fri 03/03/23		
4		**SAB Application**					
5		develop SAB application	50 days	Mon 23/01/23	Fri 31/03/23		
6		submit application	0 days	Fri 02/06/23	Fri 02/06/23	5	
7		approval of SAB application	8 wks	Mon 05/06/23	Fri 28/07/23	6	
8		**Planning Conditions**					
9		Condition 3 - Completion of Construction Environmental	0 days	Tue 28/02/23	Tue 28/02/23		
10		Condition 3 - submit Construction Environmental Management Plan	2 wks	Mon 06/03/23	Fri 17/03/23	9	
11		Condition 3 - Approval of Construction Environmental Management Plan	8 wks	Mon 20/03/23	Fri 12/05/23	10	
12		Condition 4 - Completion of Waste Management Plan	0 days	Tue 28/02/23	Tue 28/02/23		
13		Condition 4 - Submit Waste Management Plan	2 wks	Fri 05/05/23	Thu 18/05/23	12	
14		Condition 4 - Approval of Waste Management Plan	8 wks	Fri 19/05/23	Thu 13/07/23	13	
15		Condition 5 - Dealing with Contaminated Land - Plans submitted	12 wks	Thu 27/04/23	Wed 19/07/23		
16		Condition 6 - Verification Report regarding Contamination submitted and approved	12 wks	Thu 27/04/23	Wed 19/07/23		
17		Condition 7 - If piling or penetrative method used for foundation plans to be submitted and approved (confirm no piling)	4 wks	Tue 14/03/23	Mon 10/04/23		
18		Condition 8 - Water Monitoring plan to be submitted and approved (prior to operation)	16 wks	Mon 06/03/23	Fri 23/06/23		
19		Condition 9 - Historic Environmental Mitigation - Scheme to be submitted and approved	12 wks	Thu 27/04/23	Wed 19/07/23		
20		Condition 11 - Finished Floor Levels to be Submitted and approved in writing	8 wks	Fri 12/05/23	Thu 06/07/23		
21		**CIVILS**					
22		complete civils design	12 wks	Fri 31/03/23	Thu 22/06/23		
23		Start on site	1 day	Mon 03/07/23	Mon 03/07/23	7FS-20 days	
24		Asphlat Plant Foundations	55 days	Tue 04/07/23	Mon 18/09/23	23	
25		Drainage works	70 days	Tue 04/07/23	Mon 09/10/23	23	
26		Aggregate storage	77 days	Tue 04/07/23	Wed 18/10/23	23	
27		Weighbridge Foundations	15 days	Thu 09/11/23	Wed 29/11/23	28	
28		Ramp to Bins	15 days	Thu 19/10/23	Wed 08/11/23	26	
29		Surfacing to yard	15 days	Mon 06/11/23	Fri 24/11/23	35	
30		**Asphalt Plant**					
31		finalise procurement of plant	217 days	Mon 02/05/22	Tue 14/03/23		
32		place order for plant	1 day	Wed 15/03/23	Wed 15/03/23	8,31	
33		Plant manufacture	23 wks	Mon 20/03/23	Fri 25/08/23		
34		Ship Plant to site	5 wks	Mon 21/08/23	Fri 22/09/23	33FS-15 days	
35		plant construction period	10 wks	Mon 28/08/23	Fri 03/11/23	33,34FS-25 days,2	
36		Plant Commissioning	2 wks	Mon 06/11/23	Fri 17/11/23	35,40FS-10 days,4	
37		**weigh bridge**	10 days	Fri 23/06/23	Thu 06/07/23	22	
38		**HV Supply**					
39		Place order for new connection	22 wks	Mon 15/05/23	Fri 13/10/23	8	
40		Electrical Connection works	4 wks	Mon 16/10/23	Fri 10/11/23	39	
41		**Gas**					
42		Place order with Flogas	1 day	Wed 31/05/23	Wed 31/05/23		
43		Tank lead time	14 wks	Thu 01/06/23	Wed 06/09/23	42	
44		Civils works	8 wks	Mon 31/07/23	Fri 22/09/23	42FS16 wks,7,19,2	
45		Tank Installation	2 wks	Thu 07/09/23	Wed 20/09/23	43	
46		Operate the Plant	10 days	Mon 27/11/23	Fri 08/12/23	36,18,40,45,37,29	



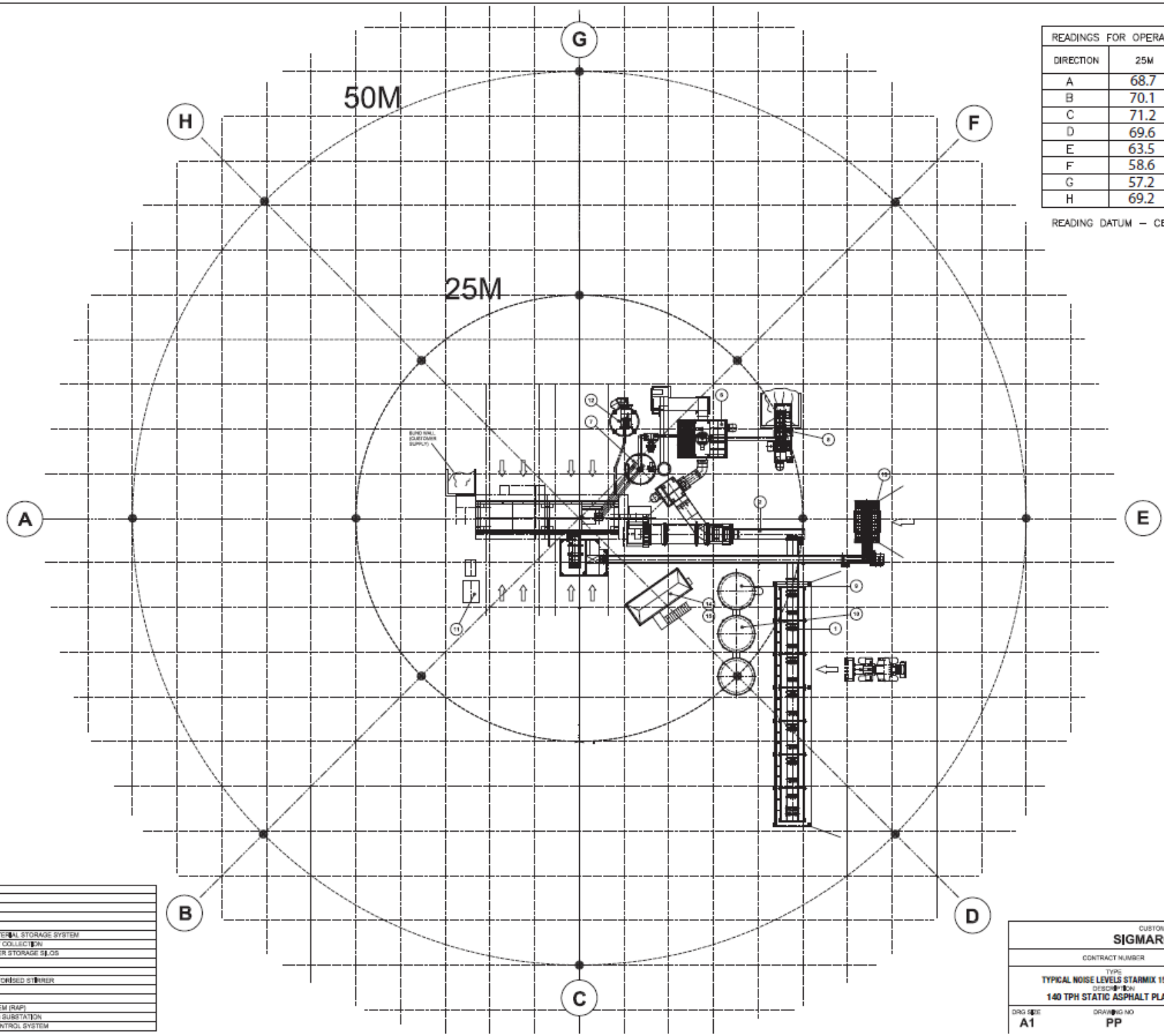
Project: Appendix B Programm
Date: Thu 01/06/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Appendix C

READINGS FOR OPERATIONAL PLANT LAeq/hr dB			
DIRECTION	25M	50M	100M
A	68.7	63.9	41.2
B	70.1	64.3	57.2
C	71.2	65.4	56.9
D	69.6	63.7	55.8
E	63.5	57.4	49.7
F	58.6	51.3	45.2
G	57.2	50.3	44.1
H	69.2	62.1	55.3

READING DATUM – CENTER OF PADDLE MIXER



REF	DESCRIPTION
1	SEVEN (7) BIN COLD FEED UNIT
2	DRYER FEED CONVEYOR
3	DRYER AND DUAL FUEL BURNER
4	SCREENING & MIXING TOWER
5	200 TONNE INTEGRAL MIXED MATERIAL STORAGE SYSTEM
6	PRIMARY AND SECONDARY DUST COLLECTION
7	IMPORTED AND RECLAIMED FILLER STORAGE SILOS
8	DUST CONDITIONER
9	BITUMEN STORAGE SYSTEM
10	PMB STORAGE SYSTEM AND MOTORISED STIRRER
11	EVOTECH ADDITIVE SYSTEM
12	SMA FIBRE ADDITIVE SYSTEM
13	RECYCLED ASPHALT FEED SYSTEM (RAP)
14	MOTOR CONTROL CENTRE (MCC) SUBSTATION
15	CONTROL HOUSE AND PLANT CONTROL SYSTEM

CUSTOMER • LOCATION
SIGMAROC - CARDIFF

CONTRACT NUMBER

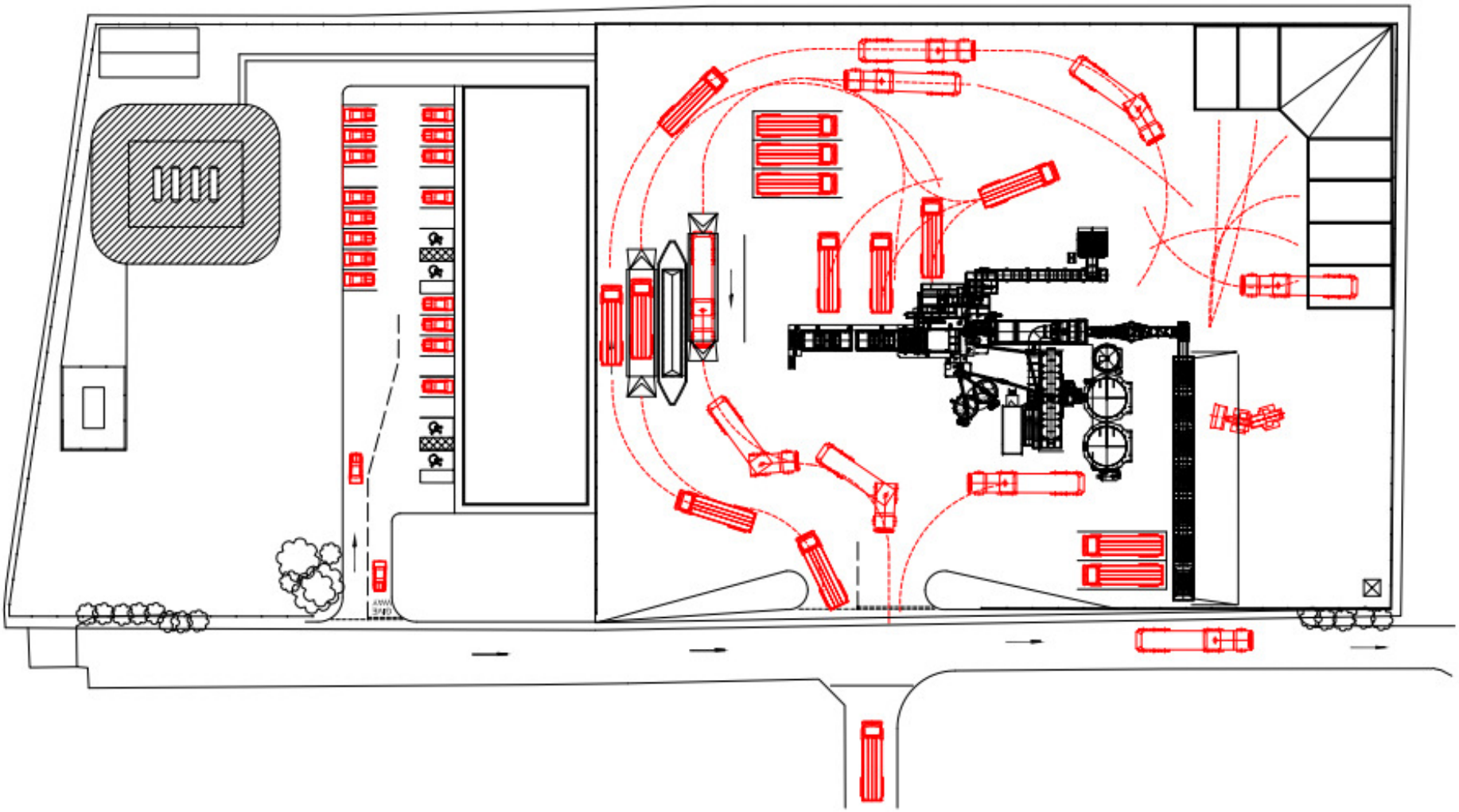
PARKER PLANT LTD
LEICESTER • ENGLAND

TYPE
TYPICAL NOISE LEVELS STARMIX 1520 HL
DESCRIPTION
140 TPH STATIC ASPHALT PLANT

DRG SIZE	DRAWING NO	ISSUE NO
A1	PP	2

Parker PLANT LIMITED

Appendix D



ORIGINAL SITE LAYOUT

CUSTOMER - LOCATION	SIGMAROC - CARDIFF
CONTRACT NUMBER	
TYPE	ASPHALT PLANT
DESCRIPTION	ORIGINAL SITE DEVELOPEMENT
ORG SIZE	A1
DRAWING NO	PP2181-ORIG
ISSUE NO	1

PARKER PLANT LTD
LEICESTER - ENGLAND

Parker PLANT LIMITED

Appendix E

Edwards Yard, Llandarcy
Proposed Asphalt Plant.

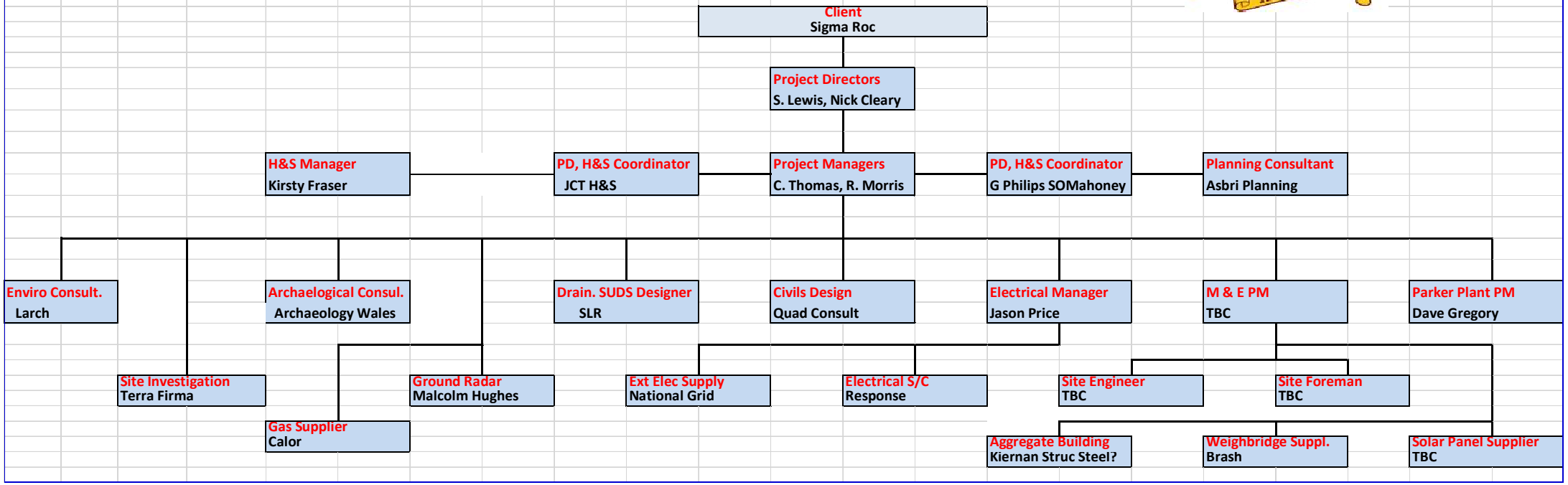
Biodiversity Enhancement Plan Timetable.

Proposed Biodiversity Enhancement Plan	Date of Completion
Remove all of the colonising scrub/tall ruderal species from the stone substrate bounding the east south and west perimeters of the site.	July 2023
Provide 2 no. bird boxes and 2 no. bat boxes attached to the main building.	September 2023.
Construct a swale along the west and south boundary adjacent to Red Pill. The vegetation planted within the area will include reeds and sedges.	September/October 2023.

All works to be completed by December 2023.

Appendix F

Llandarcy Asphalt Plant



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SITE ENVIRONMENTAL RISK ASSESSMENT

Project Name:	Llandarcy Asphalt Plant			**Project No:**			
Location:	Llandarcy	**Assessment Date**:	05/07/2022	**Assessment No**:	1	**Revision:**	0
Assessor's Name:	Craig Thomas	**Signature:**		**Review Frequency:**	6 monthly	**Last Review Date:**	

Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating L	C	Total	Action to be taken	Initial Risk Rating L	C	Total	Comments on residual risks of 6 or more and Additional information where relevant
Site Establishment :										
Site office layout:		Visual impact or pollution to river	3	2	6	Offices set upin existing office facilities and stores set up on the boundary furthest from the river to lessen impact.	1	2	2	
Wastewater and sewerage connections:		Leakage of wastewater or sewage onto land or into surface water causing pollution	3	4	12	Use existing facilities within the office. Stores and refuelling area at least 10m from draiange and river with bunded tanks.	1	4	4	
Securing the site:		Vandalism causing pollution to land or water, or damage to material causing waste	5	4	20	Install heras fencing on open boundary and store materials and plant to prevent vandalism.Boundary inspections form part of sites daily check list.	1	4	4	Investigate installing security cameras earlier during construction phase.
Wildlife protection:		If areas not cordoned off, damage to habitat, flora and fauna could occur	2	2	4	Work within existing brownfield industrial site. Vegetation strips left in place around watercourses to prevent silt entering streams.	1	2	2	
Material storage:		Inappropriate storage causing pollution, wastage, double handling or disruption.	4	3	12	Storage areas kept on the boundary furthest from the river. Store materials in locked cabins. Fuel, chemicals, and oils double bunded. Spill kits at fuel points and stores.	1	3	3	
Noise and vibration :										
General activities:		Normal construction activities causing nuisance to local community / environment	4	3	12	Switch off plant when not in use. Position away from site boundaries. No work before 0800 and no night time work.	1	3	3	
Out-of-hours working:		Out-of-hours activities causing nuisance to local community / environment	3	2	6	Pre-notify neighbours, minimise deliveries and plan noisy work for normal hours	1	2	2	
Traffic:		Traffic movements causing nuisance to local community / environment	5	2	10	No deliveries before 08:30, no idling on site and pre-arrange delivery times and routes	1	2	2	
Dust and airborne pollution:										
General activities:		General construction activities causing nuisance to local community / environment	5	2	10	No burning of waste; minimise drop heights and cover dust generating loads	1	2	2	

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SITE ENVIRONMENTAL RISK ASSESSMENT

Project Name:	Llandarcy Asphalt Plant			**Project No:**			
Location:	Llandarcy	**Assessment Date**:	05/07/2022	**Assessment No**:	1	**Revision:**	0
Assessor's Name:	Craig Thomas	**Signature:**		**Review Frequency:**	6 monthly	**Last Review Date:**	

Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating			Action to be taken	Initial Risk Rating			Comments on residual risks of 6 or more and Additional information where relevant
			L	C	Total		L	C	Total	
Exposed ground and stockpiles:		Exposed ground / stockpiles causing nuisance in dry weather to local community	4	2	8	Dampen down, position stockpiles away from sensitive areas and re-vegetate long-term stockpiles	1	2	2	
Demolition and cutting:		Demolition or cutting activities causing nuisance to local community / environment	4	2	8	Dampen down works or use dust-suppression methods of working	1	2	2	
Material storage and litter:		Material storage or litter causing nuisance to local community / environment	4	2	8	Cover dust-generating loads, keep waste in enclosed skips and secure lightweight material	1	2	2	
Traffic:		Traffic movements causing nuisance to local community / environment	5	2	10	No deliveries before 8:30, no idling on site and pre-arrange delivery times and routes	1	2	2	
Traffic and access:										
Site access/ routes and mud on roads:		Site access & causing nuisance to local community	5	2	10	Keep access roads clean, impose speed limits, and provide signage	1	2	2	
Deliveries:		Deliveries causing nuisance to local community	5	2	10	No deliveries before 8:30, no idling on site and pre-arrange delivery times and routes	1	2	2	
Traffic management:		Traffic management system causing nuisance to local community / drivers	5	2	10	Consult with local community, maintain access for landowners & residents and minimise duration	1	2	2	
Verges & footpath damage:		Plant / machinery / material storage causing damage to verges & footpaths	5	2	10	Stop parking on & protect verges and footpaths; store materials in assigned areas only. All parking within site boundary.	1	2	2	
Public Footpaths & Bridleways:		Site works causing temporary closure or re-routing of Public Footpaths or Bridleways	5	2	10	Consult with interested parties, provide temporary crossings, and provide maps & signage	1	2	2	
Water pollution:										
Fuel storage and refuelling		Spillage of fuels or oils causing water pollution, either directly or indirectly	4	5	20	Use double-bunded bowsers, refuel in set areas with spill kits & drip trays, keep under lock & key. Keep useage register	1	5	5	
Chemical storage and handling:		Spillage of chemicals causing water pollution, either directly or indirectly	4	4	16	Store chemicals in bunded areas under lock & key at least 10m away from watercourses	1	4	4	
Silty water:		Run-off from site or dewatering of excavations causing silty water to enter watercourses	3	5	15	Protect surface drains, install / use settlement ponds, filter socks, silt barriers, or discharge over grass. Vegetation strips kept in place near watercourse.	1	5	5	

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SITE ENVIRONMENTAL RISK ASSESSMENT

Project Name:	Llandarcy Asphalt Plant			**Project No:**			
Location:	Llandarcy	**Assessment Date**:	05/07/2022	**Assessment No**:	1	**Revision:**	0
Assessor's Name:	Craig Thomas	**Signature:**		**Review Frequency:**	6 monthly	**Last Review Date:**	

Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating			Action to be taken	Initial Risk Rating			Comments on residual risks of 6 or more and Additional information where relevant
			L	C	Total		L	C	Total	
Concrete washout and concrete:		Concrete washout or concrete activities causing direct or indirect water pollution	3	5	15	Ensure concrete does not enter watercourse & construct washout using lined skip away from drains & watercourse	1	5	5	
Consents:		Working near to or in, or discharging into, a watercourse without consent	5	4	20	Ensure consent sought & granted before working near to or in, or discharging into, a watercourse	1	4	4	Ordinary watercourse consent from local authority (NPTBC) and agreed method of work.
Land pollution										
Fuel storage and refuelling:		Spillage of fuels or oils causing land pollution, either directly or indirectly	4	5	20	Use double-bunded bowsers, refuel in set areas with spill kits & drip trays, keep under lock & key	1	5	5	
Chemical storage and handling:		Spillage of chemicals causing land pollution, either directly or indirectly	4	4	16	Store chemicals in bunded areas under lock & key at least 10m away from watercourses	1	4	4	COSHH store kept permanently locked in office. Key must be requested and returned.
Concrete washout:		Concrete washout causing land pollution	3	5	15	Construct washout point away from drains & watercourses complete with liner	1	5	5	
Degradation of topsoil:		Topsoil degraded due to mixing with subsoil or being stored in piles higher than 2m	3	3	9	Store topsoil and subsoil separately and keep stockpiles less than 2m high. Akk other stockpiles will be below boundary height.	1	3	3	
Contaminated land:		Contaminated land not being correctly disposed of or causing further contamination	3	4	12	Work stopped and area fenced off if hazardous materials are suspected. Seek advice. Dispose of in accordance with legal requirements.	1	4	4	
Ecology and Heritage:										
Trees and hedgerows:		Working in the vicinity of, or requiring the removal of, trees or hedgerows	5	4	20	Avoid tree felling during nesting season. Consult and obtains consents if required.	1	4	4	
Protected species:		Working within an area with protected species present	2	5	10	Consult envirob#nmental impact assessment and carry out mitigation as required	1	5	5	
Other wildlife:		Working in an area with possible contact with wildlife	2	4	8	Do not harm, injure or handle, avoid unnecessary disturbance, let them leave area of their own accord	1	4	4	
Invasive plants:		Working within an area with invasive plants	5	4	20	Consult with specialists, undertake mitigation, ensure waste disposed of correctly	1	4	4	
Reduce, re-use and recycle:										

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Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating			Action to be taken	Initial Risk Rating			Comments on residual risks of 6 or more and Additional information where relevant
			L	C	Total		L	C	Total	
Storage of material for re-use:		Long term storage of material for reuse causing dust and run-off nuisance	5	3	15	Locate away from sensitive areas, drains and watercourses, & re-vegetate long-term stockpiles. Cut off ditches at base of stockpiles to intercept silty run-off.	1	3	3	
Segregation of waste:		Non segregation reduces reuse and recycling opportunities	2	3	6	Segregated skips provided to facilitate correct disposal and recycling opportunities	1	3	3	
Waste management:										
Storage & disposal of controlled waste:		Waste not stored / disposed of correctly resulting in escape, leakage or illegal disposal	3	4	12	Store waste in secure covered skips. Use registered carriers, transfer stations and disposal sites	1	4	4	
Storage & disposal of hazardous waste		Waste not stored / disposed of correctly resulting in escape, leakage or illegal disposal	3	4	12	Store waste in secure locked containers, use registered carriers, transfer stations and disposal sites	1	4	4	
Disposal of decommissioned machinery / plant:		Decommission machinery / plant is contaminated and/or requires drain down	3	4	12	Method statements to be produced noting how to be disposed of, including drain down	1	4	4	
Disposal of test / commissioning water / fluids:		Water / fluids incorrectly disposed of or treated resulting in pollution incident	3	4	12	Method statements to be produced noting how water / fluids to be treated or disposed of	1	4	4	
Sub-contractors' waste:		Sub-contractors not storing and disposing of their waste in a correct & legal manner	3	4	12	Induct all sub contractors. They will use segregated skips provided.	1	4	4	
Project-specific or third-party requirements: *(give details)*										
					0				0	
					0				0	
					0				0	
					0				0	
					0				0	

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SITE ENVIRONMENTAL RISK ASSESSMENT

Project Name:	Llandarcy Asphalt Plant			**Project No:**			
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Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating			Action to be taken	Initial Risk Rating			Comments on residual risks of 6 or more and Additional information where relevant
			L	C	Total		L	C	Total	
					0				0	
					0				0	
					0				0	
					0				0	

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SITE ENVIRONMENTAL RISK ASSESSMENT

Project Name:	Llandarcy Asphalt Plant			**Project No:**			
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Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating L	C	Total	Action to be taken	Initial Risk Rating L	C	Total	Comments on residual risks of 6 or more and Additional information where relevant

GUIDANCE NOTE:

The Site Environmental Risk Assessment (SERA) lists the principal 'sources' or 'aspects of work' that could give rise to an environmental incident. If any other project-specific activities exist that could cause an environmental incident to occur, these should be added to the last section. It is important to ensure that all aspects of work are considered, including normal, abnormal and emergency situations.

1. For each listed or added 'Source' or 'Aspect of work', assess whether it is applicable to the project and, if it is, put 'Y' in the 'Applicable' column and summarise the hazard in the next column. Where it is not, put 'N' in the 'Applicable' column and leave the rest of the row blank.

2. For each applicable 'source' or 'aspect', undertake an initial review and assess the 'likelihood' of it occurring and the 'consequence' if it did occur. Assign scores in range of 1 to 5 to each attribute of each aspect, using the appropriate 'Risk rating table'.

3. Multiply the 'likelihood' and 'consequence' scores together to produce an 'Initial risk rating'.

4. In the 'Action to be taken' column, detail the actions or controls that will be implemented to reduce the 'likelihood' or 'consequence' of the incident occurring. These actions should be listed in the Site Environmental Plan or Poster (SEP / SEPo).

5. Now re-assess each 'source' or 'aspect' for 'likelihood' and 'consequence' with the controls in place and assign a score between 1 and 5 using the appropriate table.

6. Multiply these new scores to produce the 'Residual risk rating' and record this in the associated column.

7. If the 'Residual risk rating' is 6 or above, comment on the additional controls and actions to be taken to reduce, where possible, the risk of the incident occurring.

8. Prioritise actions for the most significant risks.

9. Review the SERA regularly — normally monthly (but dependent on site conditions) — and also when project conditions change or a new element of work starts.

10. Incorporate the highest scoring risks into daily or weekly checks.

Examples have been included for the 'Summary of hazard' and the 'Action to be taken'.

These are indicative only and do not cover all situations. Each aspect must be reviewed with regard to the actual conditions on site, the resultant hazards that exist, and the relevant actions that need to be taken to reduce the likelihood of an environmental incident occurring.

Likelihood of an Environmental Incident occurring:

Likelihood	Description	L score
Likely	Occurs repeatedly / event 'only to be expected'	5
Probable	'No surprise' / will occur several times	4
Possible	Could occur sometimes	3
Remote	Unlikely, though conceivable	2
Improbable	So unlikely that probability is close to zero	1

Environmental Consequences of an Incident occurring:

Consequence	Description of environmental impact	C score
Catastrophic	Major damage on and off site, national reputation damage, prosecution inevitable	5
Permanent	Considerable environmental damage, prosecution and national reputation damage likely	4
Moderate	Moderate impact, contamination or damage recoverable, local reputation damage, prosecution possible	3
Minor	Slight impact, small scale event contained on site, possible local media interest, prosecution unlikely	2
Slight	No measurable environmental consequence, no reputation damage, zero likelihood of prosecution	1

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SITE ENVIRONMENTAL RISK ASSESSMENT

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Assessor's Name:	Craig Thomas	**Signature:**		**Review Frequency:**	6 monthly	**Last Review Date:**	

Source or Aspect of work	Applicable	Summary of hazard	Initial Risk Rating L	C	Total	Action to be taken	Initial Risk Rating L	C	Total	Comments on residual risks of 6 or more and Additional information where relevant

Action to be taken					
16-25	Work can only continue if control measures reduce the risk rating to an acceptable level	6-16	Introduce control measures to reduce risk as low as reasonably practicable	1-5	Risk broadly acceptable, but situation needs to be monitored for changes and action to reduce risk

APPENDIX 11

Construction Phase Health & Safety Plan

HEALTH AND SAFETY PLAN

LLandarcy.
New Asphalt Plant.

CONSTRUCTION PHASE

HEALTH & SAFETY PLAN

May 2023

HEALTH AND SAFETY PLAN

CONTENTS

1.0 Project Particulars
- 1.1 Project Title
- 1.2 Description of the Works
- 1.3 Restrictions Affecting the Works
- 1.4 Contract Period
- 1.5 Client
- 1.6 Principal Designer
- 1.7 Designers

2.0 Principal Contractor's Project Team
- 2.1 Contractor's Management Structure
- 2.2 Contracts Manager
- 2.3 Site Manager
- 2.4 Health, Safety and Welfare Inspector
- 2.5 Contractors and Designers

3.0 Notification of Project and Site Set-Up

4.0 Health and Safety Standards
- 4.1 General
- 4.2 Project Specific

5.0 Selection Procedures
- 5.1 Designers
- 5.2 Contractors
- 5.3 Suppliers
- 5.4 Plant and Machinery

6.0 Communication

7.0 Identification of Risks

8.0 Emergency Procedures

9.0 RIDDOR

10.0 Welfare Facilities

11.0 Site Training and Information

12.0 Consultation with Operatives

13.0 Site Rules

14.0 Health and Safety File

15.0 Periodic and Completion Review

HEALTH AND SAFETY PLAN

APPENDICES – Forms and Checklists

A Notification of Project Forms

B Site Set-Up Checklist

C Emergency Procedures and Contacts

D not used

E Risk Assessments and Method Statements

F Programme of Works

G not used

H Operative Training Records

I Operative Contact Sheet

J Induction Register

K PPE Issue Sheet

L Consultation on Health and Safety

M Site Visitors Register

N Statutory Inspection Reports

O Accident Book Form B1 510

P RIDDOR Incident Report Form

Q COSHH Co-Ordination

R Incident Report Form

S Waste Management Forms

T Health and Safety File – Passing On of Information

U not used

V Pre-construction Health and safety Package

HEALTH AND SAFETY PLAN

1.0 PROJECT PARTICULARS

1.1 **Project Title** – Installation of new Asphalt Plant at Edwards Yard, Llandarcy. SA10 6JY.

1.2 **Description of the Works –** Provision of a new asphalt plant.

1.3 **Restrictions Affecting the Works –** None

1.4 **Contract Period –** To be confirmed

1.5 **Client – Business Managers**

Contact – Nick Cleary/ Simon Lewis
Tel – 01834 862425
e-mail – NickCleary@gdharries.co.uk/ SimonLewis@gdharries.co.uk

1.8 **Contractor Team -**

Principal Contractor – G D HARRIES & SONS LTD
Contact – Nick Cleary
Tel – 01834 862426
e-mail - NickCleary@gdharries.co.uk

2.2 CONTRACTS MANAGER (Principal Contractor)

Contact – **TBA**
Tel – 01834 860464
Fax – 01834 869156
Mobile –
e-mail –

Has responsibility for –

- Preparing the overall programme of works for the project and writing the Construction Phase Health and Safety Plan.
- Making Risk Assessments and writing Method Statements, in conjunction with the Site Manager.
- Ensuring that the works are carried out in accordance with the Construction Phase Health and Safety Plan.
- Co-ordinating all information deemed necessary for inclusion in the Health and Safety File.

2.3 SITE MANAGER

Contact – TBA
Tel –
Mobile –
e-mail –

Has responsibility for –

- The day-to-day operations on site, which include – site layout; welfare; plant and equipment; inspections and working procedures.
- Carrying out short term programming of the works, which includes undertaking risk assessments and preparing method statements were appropriate, in conjunction with the contracts manager.
- Giving Site-Specific Induction Training to all personnel and contractors who are new to the site. In circumstances when the Site Manager is away from the site for any reason, a competent person is nominated to take on the Site Manager's role in respect of health, safety and welfare.

With regards delegation of responsibilities in the absence of the site manager –

- Civils Construction Supervisor –
- Structural Construction Supervisor – Parker Plant
- Electrical Installation supervisor – Jason Price

2.4 HEALTH, SAFETY AND WELFARE INSPECTOR

Kirsty Fraser Tel – 01834 860464
e-mail - Kirsty.fraser@gdharries.co.uk

Has responsibility for –

- Monitoring all sites on a regular basis and monitoring the health, safety and welfare performance of the company as a whole.
- Carrying out inspections at a minimum of 3-week intervals with full written reports on findings, plus planning for any corrective action required.
- Advising on all aspects of health, safety and welfare.
- Carrying out investigations if there any cases of injuries, diseases or dangerous occurrences.

2.6 COMPANY HEALTH & SAFETY RESPONSIBILITIES

HEALTH AND SAFETY PLAN

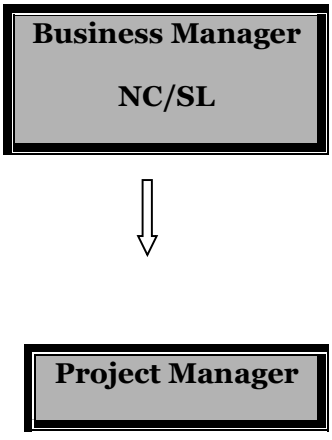
Contact – **Nick Cleary**
Tel – 01834 862425
Mobile – 07812 079945
e-mail – nick@gdharries.co.uk

Has responsibility for –

- Overall responsibility for health and safety within the company.

2.7 ROLES AND RESPONSIBILITIES

Role	Abbreviation	Name
Business Managers	NC/SL	Nick Cleary/Simon Lewis
Contract Managers	RM/PC	Richard Morris/Peter Carr
Site Engineer	TT	Tony Thomas
CDM Coordinator	PC	Peter Carr
Project Manager	AS	Andrew Sainty
Site Manager	SM	TBA
Safety Advisor	KF	Kirsty Fraser
Foreman	NJ	Neil Jones
Human Resources	VR	Vanya Rose
Structure Sub contractor	PP	Parker Plant
Electrical Manager	JP	Jason Price
Parker plant Site Manager	PP	TBA



HEALTH AND SAFETY PLAN

PC/RM

⇩

CDM Coordinator

PC

Site Manager	Plant Manager	Site Engineer	Safety Advisor	Human Resources
TBA	SL/AS	TT	KF	VR

⇩

Supervisor/ Foreman	Supervisor/ Foreman	Supervisor/ Foreman
Civils NJ	Parkers PP	Electrical JP

⇩

Workforce

- ***Responsibilities***

HEALTH AND SAFETY PLAN

Responsibilities General	Role
Read and comply with G D Harries and Sons Ltd Health and Safety Policy statement.	All
Responsibilities during initial set up. Prepare and develop Pre-construction information.	RM, PC, KF,
Identify significant hazards and include in the relevant sections of the contract documentations with regard to Health and Safety.	KF, RM, PC, SM,PP
Obtain relevant codes of practice and safety guidance notes from that might apply to the project.	RM, KF. PC, SM
Obtain the Pre-construction information from Parker Plant (Asphalt Plant Supplier), and develop through to the construction phase.	RM, TBA, PC.
Issue the Construction Phase Health and Safety Plan to the relevant persons.	RM, KF, PC, SM
Carry out induction training.	PC, RM, SM
Identify existing services, overhead and underground, and inform site operatives during induction process.	PC, RM, SM
Ensure the site canteens and offices are clean and comply with the relevant regulations	PC, PM, SM, JP.

HEALTH AND SAFETY PLAN

Display Current Insurance Certificate on site	**KF,RM**
Notify third parties e.g. HSE, Planning, Minerals.	**RM, PC,**
Responsibilities, Site supervision	**PC, RM, SM, NJ, JP. PP**
Daily checks of excavations	**SM, NJ.**
Daily Checks of Traffic and Pedestrian control measures	**SM**
Daily Checks of site equipment	**SM**
Daily checks of site security	**SM**
Reporting of accidents and Dangerous occurrences	**All**
Maintain an up-to-date accident book	**SM, KF.**
Maintain a record of training	**VR, KF.**
Maintain records of inspections of excavations, scaffolds, lifting equipment and accessories.	**SM,**
Maintain a register of plant operators	**VR, PM**

Maintain a file of risk assessments applicable to the scheme and ensure the1r distribution	**RM, SM.**
Maintain a register of drawings	**TT, RM. SM**
Inspect and approve structural steel fabrications and installations	**PP**
Maintain and update as necessary the construction phase Health and Safety Plan. Produce as constructed drawings, Produce Health and Safety file.	**PC, RM, TT, PP**
Maintain records of Health and safety inspections	**SM, KF**
Maintain record of site visitors	**SM,**

3.0 NOTIFICATION OF PROJECT AND SITE SET-UP

3.1 During the Site Set-Up stage at the beginning of the project, the *Site Safety Item Checklist* will be completed to ensure all documentation, information and statutory notices are in place. A copy of the checklist will be retained in Appendix B.

4.0 HEALTH AND SAFETY STANDARDS

4.1 **General**
The project will be carried out in accordance with all current statutory requirements governing health, safety and welfare, and the general principles set out in the *Statement of Health and Safety Policy*. Standards are retained in the Health and Safety Procedures Manual.

4.2 **Project Specific**
Further project specific health, safety and welfare standards may be adopted when considering the results of the project risk assessments. Copies of written risk assessments are retained within Appendix E.

4.3 **Health & Safety Goals**
The objective of the plan is to ensure a safe working environment for both on site operatives and other third parties who may be affected.

5.0 SELECTION PROCEDURES

5.1 **Contractors**
Sub -Contractors are selected from an annually reviewed *Approved List of Competent Contractors,* which is retained at the Head Office, subject to their suitability for the project. To be included on the list, Contractors must complete a comprehensive questionnaire to satisfy G D Harries & Sons Ltd they have made adequate provisions for the management of health, safety and welfare.

5.2 **Suppliers**
It is the policy of G D Harries & Sons LTD to purchase materials only from reputable suppliers who will provide health and safety information to support their products if requested.

5.3 **Plant and Machinery**
Items of plant and machinery are selected by carrying out risk assessments on the works that are to be carried out. Plant and Machinery is always maintained in accordance with the manufacturers' recommendations. All G D Harries & Sons LTD personnel who operate plant and machinery, where required, are independently certified to operate that plant and machinery.

6.0 COMMUNICATION

6.1 Communication between the Site Manager and the site operatives or Contractors will generally be verbal. Where considered necessary, the Project Manager will record significant verbal communications in a written form on e-mails.

6.2 Where several parties off-site are concerned (e.g., the Client; the Principal Designer; Designers; Contractors) written communication will be most appropriate. Generally, communication of this nature will be recorded on *e-mails,* which will be distributed to all respective parties.

6.3 Weekly co-ordination meetings will be necessary. Notification and minutes of such meetings will also be recorded on *e-mails,* which will be distributed to all respective parties.

6.4 Copies of e-mails are retained at both the Head Office and on site.

6.5 Design changes advised by the client will be incorporated into the works with the issue of revised drawings and if required revised method statements and risk assessments. Communication between client and contractor will be by phone or email and between contractor's supervisor and site staff verbally and all in liaison with the Principal Designer.

7.0 IDENTIFICATION OF RISKS

7.1 Preliminary risk assessments are carried out by the Contracts Manager. These are in the form of generic risk assessments, amended to be project specific. An index of these is place in Appendix E along with a copy of each assessment. Where identified by the risk assessments, written method statements are prepared.

7.2 During the project, the Site Manager/Contracts manager (or nominee) may carry out further detailed risk assessments for specific tasks which may be written or mental. Where risk assessment information needs to be conveyed to several other parties, the risk assessments are recorded on *Risk Assessment Forms a copy will* also be retained within Appendix E.

HEALTH AND SAFETY PLAN

8.0 EMERGENCY PROCEDURES

8.1 An *Emergency Information Notice* will be posted in the Office, Welfare Facilities and on the Safety Notice Board. Copied information will be held in Appendix C.

The *Emergency Information Notice* displays information regarding –

- The reporting of injuries, diseases and dangerous occurrences.
- Action to be taken in the event of an emergency.
- The name of the project.
- The full site address, telephone and fax numbers.
- The location of the site telephone.
- Emergency telephone numbers.
- The location of site first aid points.
- The location of site firefighting equipment.
- The location of the muster points, which is indicated on the location plan (Figures 1 and 3 respectively).

8.2 At all times, the Site Manager (or nominee) will ensure that a sufficient number of suitable emergency escape routes are provided and maintained in accordance with the current statutory requirements.

9.0 RIDDOR

9.1 All injuries, diseases and dangerous occurrences must be reported immediately to the Site Manager (or nominee). The site manager will then be responsible for the reporting of these occurrences to the client.

9.2 The Site Manager (or nominee) will record the relevant information relating to the injury, disease of dangerous occurrence on the RIDDOR Incident Report Form GS0402. The completed form will then be forwarded immediately to Head Office and the Contracts Manager will be informed. A copy of the completed Form GS0402 will be retained in Appendix P.

9.3 Where appropriate, the Site Manger (or nominee) will also complete the Accident Book Form B1 510 which is retained within Appendix O.

9.4 Following an accident or dangerous occurrence a detailed investigation will be undertaken by a senior member of staff and if appropriate corrective actions or modification to procedures will be implemented, revised training provided and procedures monitored for effectiveness. The client will be notified of all accidents and incidents.

10.0 WELFARE FACILITIES

10.1 All facilities provided will satisfy the appropriate current statutory requirements.

10.2 The Site Manager (or nominee) will review the site welfare facilities on a regular basis to ensure that they comply with the appropriate current statutory requirements.

10.3 If finding non-compliance with the appropriate current statutory requirements, the Site Manager (or nominee) will inform the Contracts Manager, who will endeavour to rectify the situation of soon as is practicable.

10.4 Drinking water will be made available to the work force.

HEALTH AND SAFETY PLAN

11.0 SITE TRAINING AND INFORMATION

11.1 Site specific induction training is carried out by the Site Manager, and is given to all operatives coming to work within the plant; for the first time; and/or after a long period away from the site. A guide to what should be included in site specific induction training is detailed in 11.2 to 11.9 below.

11.2 Ensure that the operatives are aware of, and understand, the G D Harries & Sons LTD *Statement of Health and Safety Policy.*
Ensure that the operatives are aware of, and understand the Site Rules and regulations.

11.3 Give a brief introduction to the site, which may include -

- The name of the project
- The full site address, telephone and fax numbers
- A brief description of the works
- The name of the Client(s)
- The name of the Principal Designer
- The name of the Site Manager
- The name of the employee's Health, Safety and Welfare representative
- The location of the site facilities including welfare facilities, site office and site parking
- The site boundaries and entrances/exits.

11.4 Outline the site emergency information, and give details of where further information on this subject can be found. Include details of at least -

- Site emergency exit routes
- The location of the emergency assembly points
- The location of the site telephone
- The location of the site first aid kit(s)
- The location of site firefighting equipment
- The name of the Appointed First Aid Person
- The location of Emergency Information Notices
- What to do in the event of an injury, disease, dangerous occurrence or an emergency.

11.5 Convey details of work that is at present taking place on the site. Identify hazards and give details of any risk assessments made if applicable. Give details of the location of the Health and Safety Plan.

11.6 Convey details of work that will commence in the near future and any applicable hazards.

11.7 Convey details of, and hazards associated with the works that those receiving the induction training are about to commence.

11.8 Query the operatives' general and job specific safety training, and be satisfied that both are adequate. Operative with inadequate or inappropriate safety training should not be allowed to commence work on the site.

11.9 On completion of induction training, enter the operatives name and company on the *Site Induction Register* which is retained in Appendix J. Ensure the operative signs in the respective box and enters the date on which the induction training was given.

11.10 In addition to site specific induction training, the Plant Manager may, from time to time as deemed necessary, give task specific toolbox talks to groups or individual operatives.

HEALTH AND SAFETY PLAN

12.0 CONSULTATION WITH OPERATIVES

12.1 The Site Manager will encourage feedback from employees on matters relating to employees' health, safety and welfare on site.

12.2 The Contract Manager will liaise with contractors and encourage feedback relating to health, safety and welfare on a regular basis.

12.3 Arrangements are recorded in Appendix L.

13.0 SITE RULES

13.1 General site health, safety and welfare rules are laid down in the *Health and Safety Policy.*

13.2 Site Specific rules are brought to the attention of operative during Site specific induction training and are detailed on the *Site Safety Notice Board.*

14.0 HEALTH AND SAFETY FILE

14.1 The Health and Safety File will be compiled for the contract.

15.0 PERIODIC AND COMPLETION REVIEW

15.1 The Site Manager, H & S advisor, Parker Plantr, will carry out all inspections required by the current statutory regulations. Copies of inspection reports are retaining within Appendix U.

15.2 Project reviews, on at least a monthly basis, are carried out by the Health, Safety and Welfare Inspector who provides a written report to the Site Manager (or nominee) and to the Head Office. The written reports are retained within Appendix J. If evidence of non-compliance with statutory requirements, or bad practice is found, the Contracts Manager will be informed who will endeavour to rectify the situation as soon as is practicable.

15.3 Upon completion, the project will be reviewed in respect of health, safety and welfare matters. Those persons attending the completion review meeting will include the Contracts Manager, The CDM coordinator, the Site Manager and the employee's Health, Safety and Welfare Representative. Also, when considered necessary, other persons may

be required to attend who may include the Health, Safety and Welfare Inspector, the Principal Designer and any Designers who have been involved.

15.4 Minutes taken at the completion review meeting will be distributed to all management staff so as to allow the lessons learnt to be adopted on future projects.

APPENDICES

HEALTH AND SAFETY PLAN

APPENDIX A

HEALTH AND SAFETY PLAN

Notification of Project Forms

Form F10.

APPENDIX B

Site Safety Set-Up & Checklist

HEALTH AND SAFETY PLAN

Before commencement, G D Harries & Sons LTD will ensure the site establishment has been set up in the area detailed. Welfare will be provided within the compound area in the form of a Mobile canteen and drying room. Clean water will be supplied from . A fully fitted first aid kit appropriately marked, suitably sized for up for the number of staff on site will be maintained within the site office.

SITE SAFETY SET-UP CHECKLIST			
ITEM	**REQUIRED (√)**	**ACTIONED (√)**	**LOCATION**
SECURITY			
Signage to quarry access roads	V		From Main Gate to site.
ACCOMMODATION (occupied accommodation to be heated)			
Toilet (with hot and cold running water, soap and towels	**√**		Welfare unit
Canteen/Rest Room (drinking water supply and means of heating food)	**√**		Welfare unit
Office			
Storage	**√**		Welfare unit
Drying Room	**√**		Welfare unit/Quarry office.
SERVICES			
Electrical Supply	v		Welfare and drying unit
Mains Water Supply	**√**		Welfare unit
EQUIPMENT			
Statutory Approved First Aid Kit	**√**		Welfare unit, and Quarry Office
Fire Fighting Equipment	**√**		Welfare unit and Quarry building,
DOCUMENTATION			
Health & Safety Plan – this includes – Form F10 notification of Project Site Safety Induction Register	**√** **X** **X**		Welfare unit F10 to be displayed, Insurance cert. to be displayed

HEALTH AND SAFETY PLAN

Visitors Site Register Accident Form B1 510 RIDDOR Notification Form GS0402	X X x		
COSHH Manual	√		H&S Plan
Health and Safety Policy	√		H&S Plan
Site Restrictions	√		H&S Plan, tool box talks, method statement and Risk assessments
Pedestrian Movements	√		H&S Plan, tool box talks, method statement ad Risk assessments
Traffic Movements			As instructed by site
Underground Services	√		Marked on site as necessary
Overhead Services	√		Highlighted and marked on site as necessary
UXB Survey	<		Not Required

APPENDIX C

Emergency Information

PROJECT AND EMERGENCY INFORMATION

PROJECT – New Asphalt Plant
DESCRIPTION OF THE WORKS – Erection and commissioning of new asphalt plant

SITE ADDRESS – Edwards Yard, Llandarcy SA10 6JY

HEALTH AND SAFETY PLAN

CLIENT – Sigma Roc

MAIN CONTRACTOR – G D Harries & Sons LTD

EMERGENCY TELEPHONE NUMBERS -

Police	-	999	
Fire	-	999	
Ambulance	-	999	
Electricity	-	National Grid	- 0800 0520400
Water	-	Welsh Water	- 0800 0520145
Gas	-	Wales & West Utilities	- 0800 111999
Telecom	-	BT	0800 800154
Health & Safety Advisors	-	Thomas Carroll	
Natural Resources Wales	-		0300 065 3000
Environmental Health	-	Officer	- 01267 234567
Archaeological	-	NPT Officer	- 01
Emergency Hospital	-	Morriston A&E	- 01792 70 22 22
First Aid/Fire Fighting Equipment	-	Located in Site Office	

EMERGENCY PROCEDURES – Site Operatives

Raise the Alarm –

- Assemble at the proposed muster point which is located on the access of the compound area
- Inform the Site Manager (or nominee), who will contact the appropriate emergency services.

On Hearing the Alarm –

- All personnel to leave the site and assemble at – **THE ASSEMBLY/MUSTER POINT.**
- Site Manager (or nominee) to take charge of the evacuation and instigate roll-call at assembly point.
- **DO NOT STOP** to collect belongings.

- Turn off all powered equipment.
- Turn off all heat producing appliances and shut cylinder valves.
- In the event of a fire, attack fire with firefighting equipment on site, provided it is safe to do so.
- Obey the Site Manager (or nominee)
- **DO NOT RE-ENTER** the site until told it is safe.

INJURIES, DISEASES AND DANGEROUS OCCURRENCES

All injuries, diseases and dangerous occurrences must be reported immediately to the Site Manager (or nominee)

APPENDIX E

Risk Assessments and Method Statements

HEALTH AND SAFETY PLAN

INDEX OF RISK ASSESSMENTS & METHOD STATEMENTS
SITE – Various Locations

RA/MS No.	JOB DESCRIPTION	DATE	ASSOCIATED RA/MS	REVIEWED (6 MONTHS)	COMMUNICATED TO WORKFORCE
RA01	Persons entering site	02/22			
RA003	Operation of mobile plant	02/22			
RA005	Powered tools and equipment	02/22			
RA007	Lifting Operations	02/22			
RA008	Working at height	02/22			
RA009	Manual Handling	02/22			
RA010	Access to work areas	02/22			

RA012	Exposure to Havs	02/22			
RA013	Excavations	02/22			
RA 015	General Cleaning	02/22			
RA017	Breaking out concrete with mechanical breaker	02/22			
RA018	Placing Concrete	02/22			
RA019	Formwork and Carpentry	02/22			
RA020	Steelfixing	02/22			
RA 021	Abrasive wheels	02/22			
		02/22			

APPENDIX H

Onsite Training Records

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

APPENDIX J

Induction Register

HEALTH AND SAFETY PLAN

SITE INDUCTION REGISTER		
Date	**Employee**	**Employee Signature**

I, the above signed, have received a copy of the above safe working procedure and have understood the contents and have no outstanding queries.

HEALTH AND SAFETY PLAN

SITE INDUCTION GIVEN TO EMPLOYEES, CONTRACTORS AND VISITORS

The induction is introduced with brief general information, which will include –

The name of the project, Client name, address and telephone number	New Asphalt Plant, Edwards Yard, LlandarcySA10 6JY
A brief description of the works	Installation of new Asphalt Plant
The location of the Quarry entrance, internal routes, exits, and the site compound	
Offices, welfare facilities and site parking	
An introduction to the site safety layout plan and emergency information	As per layout.
Action in the event of an emergency	As per action plan.
Safety footwear, head protection and Hi-Viz jackets and trousers must be worn at all times	As per risk assessment.

The site rules are explained to employees and contractors –

- No mobile phones on site – only in the canteen or office.
- PPE must be worn as appropriate to the circumstances.
- No alcohol or drugs.
- No smoking.
- Use only 110V tools.
- Keep all work areas clean and clear.
- Qualified plant operators only.
- Follow safe manual handling procedures at all times.
- Do not interfere with or remove any part of scaffolding.
- Check and inspect ladder access before use.
- Consider the safety of the public and colleagues at all times.
- Follow your employers Method Statements/Safety Systems at all times.
- If an unplanned event is occurring, consult the Site Manager/Supervisor.
- Report accidents to the Site Supervisor.
- In an emergency, call an ambulance, fire service or police – Dial 999.
- Emergency muster point (s) as per site set up plan.
- Give direction regarding first aider.
- Give direction for location of first aid equipment.
- Give direction for location of UV cream.

HEALTH AND SAFETY PLAN

SITE INDUCTION PROCEDURE FOR SUB-CONTRACTOR/SELF EMPLOYED

To be carried out before commencing work on site by Site Manager/Contracts Manager –

Duration – 15-20 minutes

CONTENT

GENERAL/SITE SPECIFIC –

1. To explain the purpose of a site induction to include –
   a. Why all operatives need to be aware of –
      i) Procedure for entry/exit site
      ii) Safe parking of vehicles
      iii) Safe movement routes for plant operatives
      iv) Use of welfare and sanitary
      v) Description of general site
      vi) Dangers of deep/unprotected excavations/any site specific
      vii) Dangers of plant/movements/any site specific
      viii) Dangers of working at height/any site specific
      ix) Name of First Aider and location of same

2. Explain procedure of updating work etc. which may be affected by above and management to who they report.

3. Explain procedure regarding PPE/hard hats.

4. Explain no smoking rules.

5. Explain use of radios/mobile phones.

Make induction with bullet points – short and sharp

Keep numbers to a maximum of 5 at any induction.

HEALTH AND SAFETY PLAN

PROCEDURE FOR EXPLAINING THE NEED FOR RISK ASSESSMENT TO SUB-CONTRACTORS/ SELF EMPLOYED

This should be carried out after site induction but before method statement as the latter will usually refer to Risk Assessments.

Duration – 15 minutes

CONTENT

1. Explain why all operatives need to risk assess operations due to possibility of danger to themselves and other persons.

2. Assessment outlines how the operation could injure an operator and how the assessment reduces/eliminates the danger.

3. Explain how after carrying out the risk assessment leads into the formulation of Method Statement.

4. Reinforce the need to carry out the Risk Assessment to make the workplace safer.

5. Discuss/review specific Risk Assessment(s).

Ensure only interested parties in attendance and continue with procedure with Method Statement.

HEALTH AND SAFETY PLAN

PROCEDURE FOR EXPLAINING THE NEED FOR METHOD STATEMENTS TO SUB-CONTRACTORS/SELF EMPLOYED

This should be carried out immediately after procedure for risk assessment.

Duration – 15 minutes

CONTENT

1. Why method statements are necessary.
2. What method statements should include.
3. Importance of complying with statement.
4. Need to inform management if it is necessary to change statement.
5. Run through specific statement.
6. Check all operatives understand statement.

Keep numbers to interested parties only i.e., operative involved with specific statement.

HEALTH AND SAFETY PLAN

IMPORTANT NOTICE
ALCOHOL/DRUG ABUSE

In response to recent concern from both Management and Operatives, detailed is the company policy regarding alcohol/drug abuse –

ALCOHOL/DRUG ABUSE WILL NOT BE TOLERATED FROM ANY DIRECT EMPLOYEE OR SUB-CONTRACTOR AND WILL RENDER SUCH TO EITHER –

1. **DISMISSAL WITHOUT NOTICE**

AND/OR

2. **REMOVAL FROM SITE**

SIGNED -

HEALTH AND SAFETY PLAN

APPENDIX K

PPE Issue Sheet

HEALTH AND SAFETY PLAN

Site Manager Signature – **Date –**

PERSONAL PROTECTIVE EQUIPMENT (PPE) RECORD OF ISSUE (Site)

PPE will be issued to all direct employees suitable and sufficient to task and free of charge. Employees should be aware that by signing the record of issue, they will endeavour to look after the equipment provided and will report any faults, defects, wear and tear, loss or theft immediately to the Company so that replacements can be issued.

EQUIPMENT DESCRIPTION	QTY	ISSUED TO	SIGNATURE

HEALTH AND SAFETY PLAN

APPENDIX L

Consultation on Health and Safety

CONSULTATION ON HEALTH AND SAFETY MATTERS

G D Harries & Sons LTD will ensure that an adequate standard of communication is achieved on the site.

Individuals
Senior management and site management will consult directly with employees. Historically, due to the family nature of the company, senior management has discussed safety matters directly long serving operatives, rather than through safety representatives. An open-door policy is operated and will continue under the new management regime and one-to-one discussion is encouraged. New employees are given an induction and seconded to senior operatives for a settling in period. Consultation and feedback is encouraged at site level through toolbox talks.

Work Gang
Consultation will be encouraged at work gang level through method statement briefings.

APPENDIX M

Site Visitors Register

Scheme: New Asphalt Plant, Llandarcy. **VISITOR RECORD**

DATE	NAME	ARRIVAL TIME	COMPANY	VEHICLE REG	PERSON VISITING	SIGNATURE CONFIRMING READING OF VISITOR'S RULES	DEPARTURE TIME

APPENDIX N

Statutory Inspection Reports

STATUTORY INSPECTIONS AND INSPECTIONS

Inspection and monitoring of almost every aspect of construction activity is a statutory requirement under various sections of Health and Safety Legislations. To assist in the monitoring process, this section will outline the procedures for carrying out inspections at all Company locations and taking the necessary corrective action.

Registers are to be completed as per procedures laid down within this section to include –

- Excavation Inspection.
- Provision and Use of Work Equipment – Report of Inspection
- Lifting Operations and Lifting Equipment – Report of Inspection
- Personal Protective Equipment Issue Register (site only)

PROCEDURES

HEALTH AND SAFETY PLAN

Excavation Inspections

- Site Managers are to ensure completion of the report of inspection of excavations as required under current legislation.
- Visual inspections are to be undertaken by any person entering an excavation and defects reported to the Site Manager.
    - Excavations should be inspected before the start of every shift by site management or nominated representative and recorded within the site diary.
- A written inspection report is to be completed where excavations are open for seven days or following inclement weather (or any event affect the stability of the excavation).

Lifting Operations and Lifting Equipment

- The Site Manager is to ensure records of inspection of lifting equipment and lifting gear are undertaken as required by current legislation.
- Valid certificates of thorough examination and inspection will be provided on arrival to site for all lifting equipment and lifting gear as follows –
    - Lifting equipment for lifting persons – every six months
    - Accessories for Lifting (slings, chains etc) – every six months
    - All other lifting equipment – every 12 months
    - Proof of inspection following any accident/incident which could have affected the integrity of the lifting equipment.
- Following installation of equipment such as tower cranes, a thorough test and examination must take place before being put into service for the first time. Subsequent inspections will be as for all lifting equipment and accessories.
- Written inspections of lifting equipment are to be recorded every seven days. The inspection is to be completed by the equipment user.

Work Equipment

- Site Managers are to ensure completion of the report of inspection of work equipment are undertaken as required under current legislation.
- Valid certificates of examination where required, or records of preventative maintenance are to be provided for work equipment arriving on site.
- Written inspections of work equipment are to be recorded every seven days. The inspections are to be completed by the equipment user.
- Work equipment requiring weekly inspection are those items in everyday use on site which could easily be damaged and cause harm, i.e., Stihl saw, block cutters, dumpers, compressors, hoses etc

Personal Protective Equipment Issue Register

- A register is to be completed for all site issue of Personal Protective Equipment.

HEALTH AND SAFETY PLAN

SITE SAFETY, HEALTH AND WELFARE REPORT

Site Address – Edwards Yard, Llandarcy SA10 6JY
Site Manager –
Contracts Manager – Richard Morris

1. Previous Report Closed Out
2. Health and Safety Plan
3. Risk Assessments/Method Statements
4. Inductions
5. COSHH, Noise, HAVS etc
6. Registers/Records
7. Training/Medical/Skills Card
8. Welfare Facilities
9. First Aid
10. Consultation
11. Fire/Flammables/Emergency
12. Electricity Inc. PAT
13. Environmental Issues
14. Housekeeping
15. Scaffold/Working Platforms
16. Ladders Access/Egress
17. Edge Protection
18. Excavations/Earthworks
19. Lifting Equipment
20. Demolition
21. Temporary Works
22. Safety Equipment/PPE
23. Site Security
24. Other Issues

NO.	ATTENTION REQUIRED	ACTION	ACTION TO BE TAKEN

Site Manager Signature –
Date –

HEALTH AND SAFETY PLAN

APPENDIX O

Accident Book Form B1 510

HEALTH AND SAFETY PLAN

ACCIDENT BOOK FORM B1 510

NAME OF PLACE – New Asphalt Plant
ADDRESS – Edwards Yard, Llandracy SA10 6JY
NAME OF EMPLOYER OR OCCUPIER OF PLACE – G D Harries & Sons LTD
ABOUT THE PERSON WHO HAD THE ACCIDENT
NAME –
HOME ADDRESS –
OCCUPATION –

ABOUT THE PERSON FILLING IN THIS FORM	
SIGNATURE –	**DATE –**
ADDRESS –	
OCCUPATION –	

ABOUT THE ACCIDENT	
DATE –	**TIME –**
WHAT ROOM OR PLACE DID THE ACCIDENT HAPPEN –	

HOW DID THE ACCIDENT HAPPEN? (Give the cause, if possible, if any personal injury, say what it is)

Employer's Initials – (Please initial the box if the accident is reportable under Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR) 1995)

HEALTH AND SAFETY PLAN

APPENDIX P

RIDDOR Incident Report Form

GS402

HEALTH AND SAFETY PLAN

ACCIDENT REPORTING SUMMARY SHEET

- All accidents are to be reported to Kirsty Fraser who will inform HSE.
- Complete Form GS0402 and return to Kirsty Fraser.
  NOTE – GS0402 contains more information than F2508 which Kirsty Fraser then submit to HSE.

Site Inspections

Safety Manager – Kirsty Fraser 01834 860464

For information only, the HSE Contact Office is –

Tel -	0845 300 9923 (8.30am – 5.00pm)
Fax -	0845 300 9924 (anytime)
Internet -	www.riddor.gov.uk (anytime)
e-mail -	riddor@natbrit.com
Post -	Incident Contact Centre Caerphilly Business Park Caerphilly CF83 3GG

HEALTH AND SAFETY PLAN

1. INJURED PERSONS NAME -

2. TYPE OF INCIDENT					
Fatality		Became Unconscious		Under 3-day Injury	
Major Injury/Condition		Needed Resuscitation		Damage Incident	
Over 3-day Injury		In Hospital more than 24 Hours		Reportable Disease	
MOP Taken to Hospital		Dangerous Occurrence		No Time Lost	

3. PERSON COMPLETING THIS REPORT	
NAME -	
POSITION -	
COMPANY NAME AND ADDRESS -	
TELEPHONE -	
SITE ADDRESS -	
SITE TELEPHONE NUMBER -	
SITE CONTACT (IF DIFFERENT FROM THE ABOVE) -	
NAME OF RESPONSIBLE PERSON AT HEAD OFFICE -	
POSITION/TITLE -	
TELEPHONE NUMBER -	
DO YOU REQUEST AN INVESTIGATION?	**YES / NO**
IF YES, TELEPHONE 01235 544800 IMMEDIATELY.	
N.B. THERE IS A DUTY CONSULTANT ON CALL OUTSIDE OFFICE HOURS	

4. GENERAL DETAILS OF INCIDENT		
DATE OF INCIDENT – **TIME OF INCIDENT –**		
EXACT LOCATION OF INCIDENT –		
IS YOUR COMPANY IN OVERALL CONTROL OF THIS SITE/PREMISES?	**YES / NO**	
IF NO, PLEASE GIVE THE NAME OF		
PRINCIPAL CONTRACTOR/OCCUPIER -		
SITE MANAGER -		

5. INJURED PERSON					
FULL NAME -		**SEX -**	**M / F**	**AGE -**	
ADDRESS -					
TELEPHONE -					
COMPANY EMPLOYEE -	**YES / NO**	**OTHER COMPANY EMPLOYEE -**		**YES / NO**	

HEALTH AND SAFETY PLAN

SELF EMPLOYED -	**YES / NO**	**MEMBER OF PUBLIC -**	**YES / NO**
NATURE OF INJURY -			
WHAT PART OF THE BODY -			
EMPLOYER (if not company employee) -			
EMPLOYER'S ADDRESS -			
OCCUPATION -		**HOW LONG WITH COMPANY?**	
WHAT WAS THE INJURED PERSON DOING AT THE TIME OF THE INCIDENT?			
WAS THIS SOMETHING HE/SHE WAS AUTHORISED TO DO?		**YES / NO**	
WAS HE/SHE AUTHORISED TO BE WHERE THE INCIDENT OCCURRED?		**YES / NO**	
WHEN WAS THE INCIDENT REPORTED TO YOU?		**DATE -**	**TIME -**
WERE THERE ANY WITNESSES TO THE INJURIES?		**YES / NO**	
WAS FIRST AID TREATMENT GIVEN ON SITE?		**YES / NO**	
IF YES, BY WHOM -			
WAS MEDICAL/HOSPITAL TREATMENT OFFERED?		**YES / NO**	
IF YES, GIVE DETAILS -			
ANTICIPATED ABSENCE FROM WORK -			

6. INCIDENT DETAILS

7. WITNESSES

NAME (S) -			
ADDRESS (S) –			
TELEPHONE NUMBER (S) -			

8. ACTION TAKEN TO PREVENT RECURRENCE

SIGNATURE –

DATE –

HEALTH AND SAFETY PLAN

REPORT OF A CASE OF DISEASE

Filling in this form

This form must be filled in by an employer or other responsible person.

ABOUT YOU

1 What is your full name?

2 What is your job title?

3 What is your telephone number?

ABOUT THE AFFECTED PERSON

1 What is their full name?

2 What is their date of birth?

3 What is their job title?

ABOUT YOUR ORGANISATION

What is the name of your organisation?

What is its address and postcode?

4 Are they: ☐ Male? ☐ Female?

5 Is the person ☐ An employee? ☐ On a training scheme?

If training scheme, give details:

6 Does the affected person usually work at this address?

Yes ☐ Go to question 7

No ☐ Where do they normally work?

☐ On work experience?

☐ Employed by someone else? Give details:

What type of work does the organisation do?

☐ Other? Give details:

HEALTH AND SAFETY PLAN

ABOUT YOU

Please give:

- The name of the disease, and the type of work it is associated with; or
- The name and number of the disease (from Schedule 3 of the Regulations)

2 What is the date of the statement of the Doctor who first diagnosed or confirmed the disease?

ABOUT YOU

Please describe any work done by the affected person which might have led to them getting the disease.

If the disease is thought to have been caused by exposure to an agent at work (e.g. a specific chemical) please say what that agent is.

Give any other information which is relevant.

Give your description here

Continue your description here

YOUR SIGNATURE

Signature

Date

Where to send the form
Please send it to the Enforcing Authority for the place where the affected person works. If you do not know the Enforcing Authority, send it to the nearest HSE office.

For official use

Client number

Location number

Event number

INV REP Y N

HEALTH AND SAFETY PLAN

APPENDIX Q

COSHH Co-Ordination

HEALTH AND SAFETY PLAN

INDEX OF COSHH ASSESSMENTS

COSHH No.	DESCRIPTION	DATE	ASSOCIATED FORMS	REVIEWED (6 MONTHS)	COMMUNICATED TO WORKFORCE
CA01	Ready Mixed Concrete	Oct 21		July 21	
CA02	Cement	OCT 21		April 21	
CA36	Diesel	OCT 21		April 21	
CA50	Shuttering oil	OCT 21		April 21	
CA88	Petrol	OCT 21		April 21	
CA90	Epoxy resin	OCT 21		April 21.	

HEALTH AND SAFETY PLAN

APPENDIX S

Waste Management Forms

HEALTH AND SAFETY PLAN

APPENDIX V

Pre-construction Information Package
Existing Records and Plans

Pre-construction Information Package

The pre-construction information can be found in the site file which has been compiled for this project and contains all relevant information, Including project specification and/or schedule and project drawings.

Existing Records and Plans

Existing records and construction plans can be found in the site file. The drawing register specifies all construction and statutory utilities drawings.

APPENDIX 12

Drainage Maintenance Plan

LLANDARCY ASPHALT PLANT

Drainage Maintenance Plan

Prepared for: G D Harries and Sons Ltd.

SLR Ref: 407.V64136.00001
Version No: Issue 3
May 2023

BASIS OF REPORT

This document has been prepared by SLR with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with G D Harries and Sons Ltd. (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

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Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

CONTENTS

1.0 INTRODUCTION 1

2.0 PIPEWORK, CHANNELS AND CHAMBERS 2

3.0 CATCHPITS 3

4.0 SWALE 4

5.0 FILTER STRIP 5

6.0 POLLUTION CONTROL CHAMBER 6

7.0 CLASS 1 OIL INTERCEPTOR 7

9.0 HEADWALLS AND TIDE FLAP 8

10.0 ACCESS 9

11.0 RECORD KEEPING 9

12.0 PERSONNEL 9

DOCUMENT REFERENCES

DRAWINGS

Drawing 003: Drainage General Arrangement Sheet 1 of 2
Drawing 004: Drainage General Arrangement Sheet 2 of 2
Drawing 005: Drainage Details

1.0 INTRODUCTION

This plan has been prepared to document the inspection and maintenance regime to ensure the proper operation of the surface water drainage system serving the Asphalt Plant (the Plant) at the former E M Edwards Works, Llandarcy, Skewen, Neath.

Surface water runoff from the area of hardstanding serving the Plant is to be drained to the Red Jacket Pil, a tidally influenced watercourse, via a sustainable drainage system incorporating catchpits, swales and a Class 1 oil interceptor.

The general arrangement of the drainage system is shown by Drawings 003 and 004[1].

The elements of the drainage system comprise:

- Catchpits draining to;
- A swale draining to;
- A Class 1 oil interceptor draining to;
- A swale draining to;
- An outfall to the Red Jacket Pil via a tide flap.

In addition, the car park to the rear of the existing workshop will drain to the Class 1 Oil Interceptor via a filter stip.

The inspection and maintenance regimes for each of these elements is set out in the following sections of this plan.

[1] To be replaced with as constructed drawings when available

2.0 PIPEWORK, CHANNELS AND CHAMBERS

Maintenance Schedule	Required Action	Minimum Frequency	By whom	Method
Regular maintenance	Ensuring drainage intakes are clear of debris/silt.	Monthly (or as required)	G D Harries	Visual inspection and removal of debris / silt manually
Occasional maintenance	Jet clean sewer lines, gully tails and kerb channels to remove grease, grit, sediment and other debris to ensure conveyance capacity is not compromised.	Every 2 years	Specialist contractor to be appointed by G D Harries	Method statement to be agreed with G D Harries
Intermittent maintenance	CCTV survey of sewer lines to identify any defects/signs of performance degradation such as: • Cracked / deteriorating pipes; • Leaking joints/seals at manholes; • High water lines showing regular high stage in pipes (sign of lack of capacity or downstream constraint); and • Suspected infiltration or exfiltration.	Every 2 – 5 years	Specialist contractor to be appointed by G D Harries	Method statement to be agreed with G D Harries
Remedial actions	Repair defects using suitable methods. Effective temporary repairs may be sufficient in short term until scheduled/capital improvements can be made.	As required	Specialist contractor to be appointed by G D Harries	Method statement to be agreed with G D Harries
Monitoring	Record areas of surface ponding / intake bypassing / surcharging (photos, inundated areas, depths) during extreme storm events and investigate the reasoning for this post-storm.	As required	G D Harris	Refer any such incidents back to the scheme designer

3.0 CATCHPITS

Maintenance Schedule	Required Action	Typical Frequency	By whom	Method
Regular Maintenance	Remove any accumulated silt in the invert of the chamber.	As required, based on regular weekly inspections	G D Harries	Grating designed to allow silt removal using a mini excavator
Monitoring	Check for blockage in outlet pipe to swale	As part of weekly inspection	G D Harries	Visual inspection

4.0 SWALE

Maintenance Schedule	Required Action	Typical Frequency	By whom	Method
Regular Maintenance	Remove litter and debris	Monthly, or as required	G D Harries	Manual litter picking
	Cut grass – to retain grass height within specified design range	Monthly (during growing season), or as required	Landscape contractor to be appointed by G D Harries	Grass cutting
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required		Manual removal
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly	G D Harries	Visual inspection
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly	G D Harries	Visual inspection
	Inspect for silt accumulation, establish appropriate silt removal frequencies	Weekly	G D Harries	Visual inspection
Occasional Maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required or if bare soil is exposed over 10% or more of the swale treatment area	Landscape contractor to be appointed by G D Harries	Specification and method statement to be agreed with G D Harries
Remedial Actions	Repair erosion or other damage by returfing or reseeding	As required	Landscape contractor to be appointed by G D Harries	Specification and method statement to be agreed with G D Harries
	Relevel uneven surfaces and reinstate design levels			
	Remove build-up of sediment.		G D Harries	Manual or with a mini-excavator with suitable 'ditching' bucket.

5.0 FILTER STRIP

Maintenance Schedule	Required Action	Typical Frequency	By whom	Method
Regular Maintenance	Remove litter and debris	Monthly (or as required)	G D Harries	Manual
	Cut the grass – to retain grass height within specified design range	Monthly (during growing season), or as required	Landscape contractor to be appointed by G D Harries	Grass cutting
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)	Landscape contractor to be appointed by G D Harries	Specification and method statement to be agreed with G D Harries
	Inspect filter strip surface to identify evidence of erosion, poor vegetation growth, compaction, ponding, sedimentation and contamination (eg oils)	Monthly (as start, then half yearly)	G D Harries	Visual inspection
	Inspect silt accumulation rates and establish appropriate removal frequencies	Monthly (at start, then half yearly)	G D Harries	Visual inspection
Occasional Maintenance	Reseed areas of poor vegetation growth; alter plant types to better suit conditions, if required	As required or is bare soil is exposed over >10% of the filter strip area	Landscape contractor to be appointed by G D Harries	Specification and method statement to be agreed with G D Harries
Remedial Actions	Repair erosion or other damage by re-turfing or reseeding	As required	Landscape contractor to be appointed by G D Harries	Specification and method statement to be agreed with G D Harries
	Relevel uneven surfaces and reinstate design levels	As required	Landscape contractor to be appointed by G D Harries	Specification and method statement to be agreed with G D Harries
	Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required	G D Harries	Manual or with a mini-excavator with suitable 'ditching' bucket.

6.0 POLLUTION CONTROL CHAMBER

Maintenance Schedule	Required Action	Typical Frequency	By who	Method
Regular Maintenance	Remove any accumulated silt in the invert of the chamber.	As required, based on inspections	Approved contractor [a].	Using gully sucker or similar
	Remove any debris from flow control device.	As required, based on inspections	G D Harries	The chamber should be considered a **CONFINED SPACE** so if man entry is required to remove debris this should be completed by competent personnel, or a specialist contractor.
	Check operation of pollution control valve.	Monthly	G D Harries	Valve to be fully closed and opened again.
Occasional Maintenance	Service pollution control valve	In accordance with manufacturers recommendations	Specialist contractor	Method statement to be provided by the contractor
Monitoring	Monitor accumulation of silt in the invert of the chamber.	Monthly for first six months and then, provided there are no significant accumulations, quarterly from then on	G D Harries	Visual inspection
	Check for blockage of flow control device (this should be obvious as the lagoon will not drain down and the chamber will be full of water)			Visual inspection

7.0 CLASS 1 OIL INTERCEPTOR

Maintenance Schedule	Required Action	Typical Frequency	By who	Method
Regular Maintenance	Remove any accumulated silt and contaminants.	As required, based on inspections	Approved specialist contractor	Method statement to be agreed with G D Harries
Monitoring	Check the integrity of the interceptor and all its mechanical parts.	Every 3 to 6 months or in accordance with manufacturers recommendations	Approved specialist contractor	Method statement to be agreed with G D Harries
	Inspect the filters and repair or replace, where necessary			
	Assess the amount of contaminants that have collected in the tank	Every 3 to 6 months or in accordance with manufacturers recommendations **or** following heavy rainfall	G D Harries	Visual inspection

9.0 HEADWALLS AND TIDE FLAP

Maintenance Schedule	Required Action	Typical Frequency	By whom	Method
Regular Maintenance	Remove any accumulated silt from the apron of the headwall.	As required, based on inspections	G D Harries	Method statement to be prepared by G D Harries to reflect working adjacent to the Red Jacket Pil
	Check operation of tide flap. Ensure freely opening and seating properly.	Monthly	G D Harries	

10.0 ACCESS

The Asphalt Plant is to be laid entirely to hardstanding and therefore there will be no impediment to access.

Access to the headwall and tide flap to be restricted to authorised personnel only working to an agreed method statement and risk assessment due to the proximity to the Red Jacket Pil.

11.0 RECORD KEEPING

G D Harries will maintain a record of inspections, actions arising and regular and occasional maintenance work.

12.0 PERSONNEL

Inspections, record keeping and management of the maintenance of the SuDS elements will be completed by a competent person, or persons, appointed by G D Harries' UK Operations Manager.

DRAWINGS

N

COVERED AGGREGATE BAYS

RAMP

ASPHALT PLANT FOUNDATION SLAB

EXISTING WORKSHOP BUILDING

EXISTING CAR PARK TO BE LOCALLY RE-GRADED AND RESURFACED TO FALL TO FILTER STRIP

GAS STORAGE COMPOUND

KERB

8.20
8.20
8.00
10.40
7.80
10.40
2.80
7.60
7.60
7.60
7.60
7.40
7.40
7.60
7.60
7.30
7.60
7.40
7.50
7.40
7.35
7.40
7.25
7.40
6.90
7.20
6.90
7.20
7.90
7.90

ACO S105 501

ACO S105 S1 - S30 (SLOPING DEPTH CHANNEL)

ACO S300 2400

ACO S300 2400

ACO S300 2400

ACO S300 2400

SEE DETAIL A FOR INSTALLATION OF ACO DRAIN

CATCHPIT (SEE DETAIL B)

CATCHPIT (SEE DETAIL B)

CATCHPIT (SEE DETAIL L)

EROSION PROTECTION (SEE DETAIL C)

EROSION PROTECTION (SEE DETAIL C)

FLOWGAS EMERGENCY PEDESTRIAN EGRESS ROUTE (SEE DETAIL E)

HEADWALL (SEE DETAIL F)

MANHOLE (SEE DETAIL G)

MH1
CL 7.25
IL 6.61

225mm DIA @ 1.25%

225mm DIA @ 1.25%

FILTER STRIP (SEE DETAIL K)

GIVE WAY

0 2.5 5.0 7.5 10m 15 20 25
Metres 1:250

NOTES

1) TOPOGRAPHIC LEVELS TAKEN FROM LLANDARCY 3D.DWG, G D HARRIES AND SONS LTD, LLANADARCY, TOPOGRAPHICAL SURVEY, GDHLLAN/TT/0002
2) PROPOSED LEVELS TAKEN FROM 407.V64136.00001.18.102.0 Proposed Site TC 15.03.23-A2 PRODUCED BY GERALD D HARRIES AND SONS LTD
3) THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT NPTCBC SPECIFICATION AND CONSTRUCTION PUBLICATION IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.
4) ALL SUDS COMPONENTS SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CIRIA REPORT C756 THE SUDS MANUAL AND CIRIA REPORT C768 GUIDANCE ON THE CONSTRUCTION OF SUDS

LEGEND

+7.60 PROPOSED LEVELS

SITE BOUNDARY

APPLICATION BOUNDARY

EXCESS FLOW PATH

Revision	By	Chk'd By	Date	Comments
1	AB	ILW	05/23	SCHEME REVISED TO FIT WITHIN PLANNING BOUNDARY
0	TS	IW	22/07	

GERALD D HARRIES AND SONS LTD

SLR
FULMAR HOUSE
BEIGNON CLOSE
OCEAN WAY
CARDIFF. CF24 5PB
T: 029 2049 1010
F: 029 2048 7903
www.slrconsulting.com

Site: ASPHALT PLANT AT LLANDARCY

Project: SURFACE WATER MANAGEMENT

Drawing Title: **DRAINAGE GENERAL ARRANGEMENT (SHEET 1 OF 2)**

Scale: 1:250 @ A1

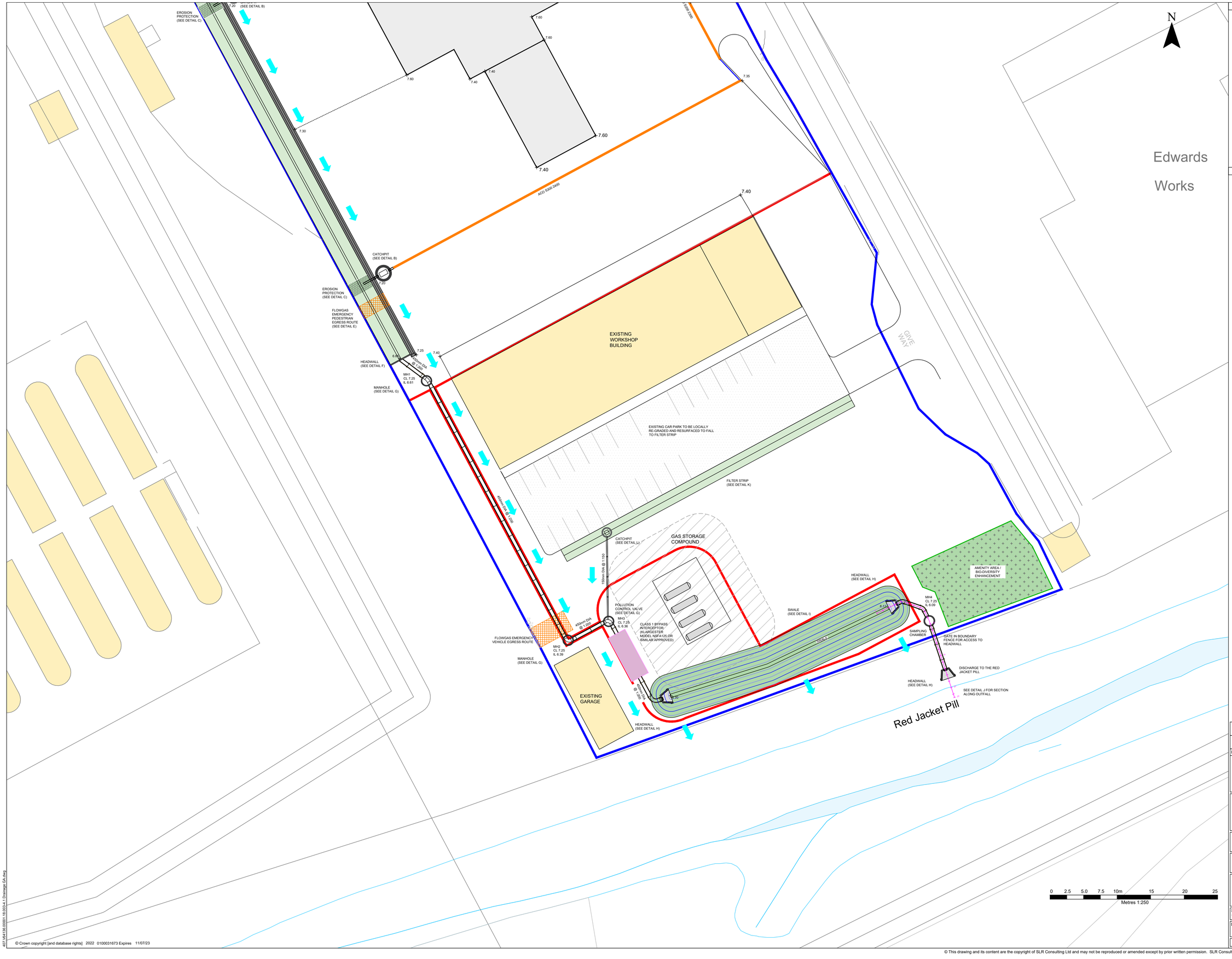
Date: 11.07.22

Drawing Number: **003**

Revision: **1**

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2) PROPOSED LEVELS TAKEN FROM 407.V64136.00001.18.102.0 Proposed Site TC 15.03.23-A2 PRODUCED BY GERALD D HARRIES AND SONS LTD
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LEGEND

- +7.60 — PROPOSED LEVELS
- SITE BOUNDARY
- PLANNING BOUNDARY
- EXCESS FLOW PATH

Revision	By	Chk'd By	Date	Comments
1	AB	ILW	05/23	SCHEME REVISED TO FIT WITHIN PLANNING BOUNDARY
0	TS	IW	22/07	

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SLR
FULMAR HOUSE
BEIGNON CLOSE
OCEAN WAY
CARDIFF. CF24 5PB
T: 029 2049 1010
F: 029 2048 7903
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Site: ASPHALT PLANT AT LLANDARCY

Project: SURFACE WATER MANAGEMENT

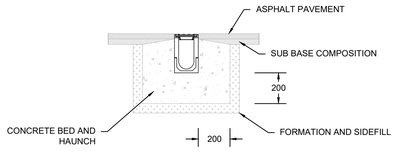
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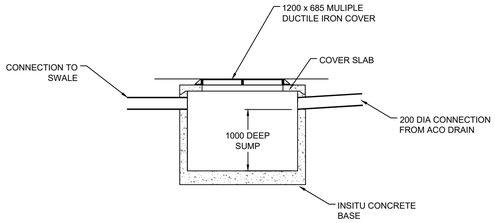
Drawing Number	Revision
004	1

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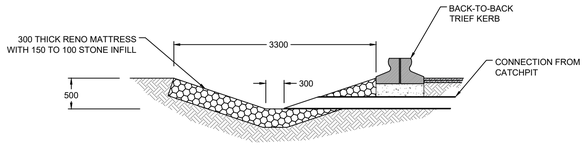
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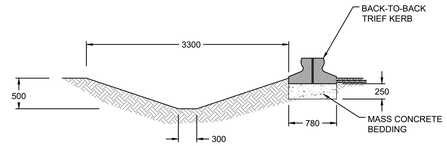
DETAIL A - ACO DRAIN INSTALLATION
SCALE 1:20



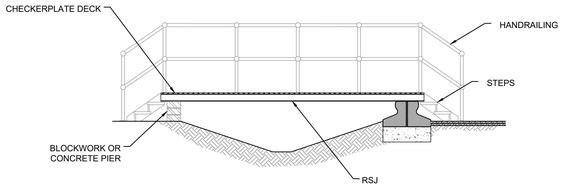
DETAIL B: CATCHPIT
SCALE 1:50



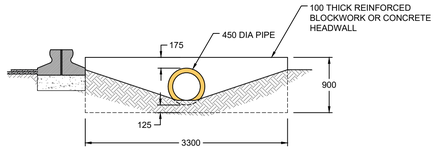
DETAIL C: ERROSION PROTECTION
SCALE 1:50



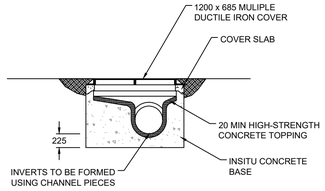
DETAIL D: SWALE & TRIEF KERB
SCALE 1:50



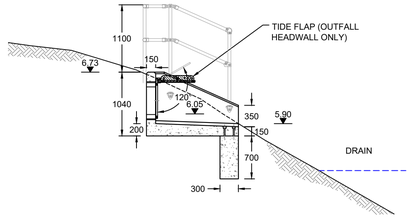
DETAIL E: FLOGAS EMERGENCY PEDESTRIAN EGRESS ROUTE
SCALE 1:50

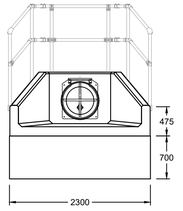


DETAIL F: HEADWALL
SCALE 1:50



DETAIL G: 1350 DIA TYPE C MANHOLE
SCALE 1:50





DETAIL H: HEADWALL
SCALE 1:50

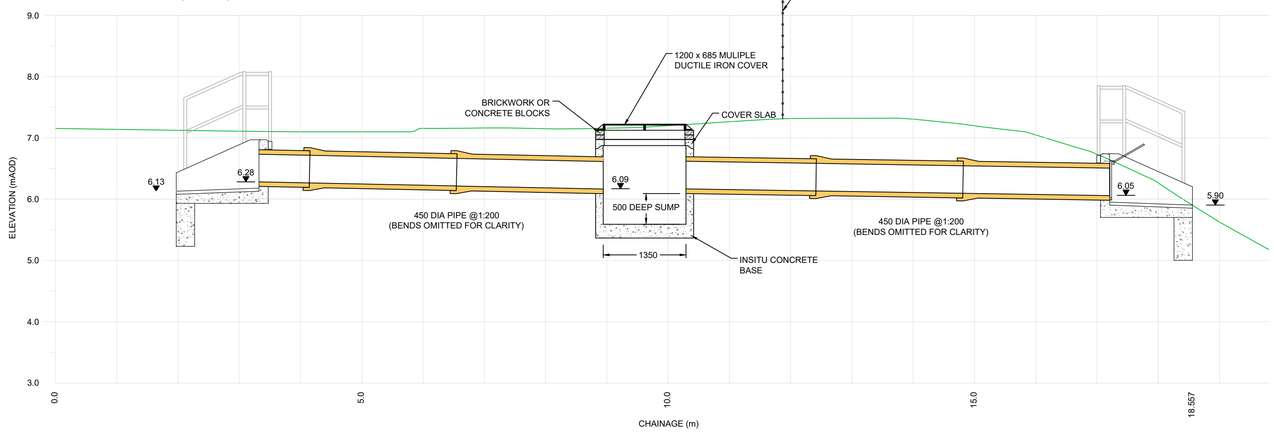


DETIAL I: SWALE
SCALE 1:50

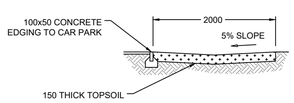
HEADWALL
(SEE DETAIL H)

SAMPLING CHAMBER
(TYPE C MANAHOLE)

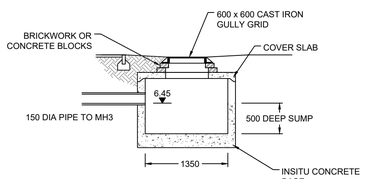
HEADWALL AND TIDE FLAP
(SEE DETAIL H)



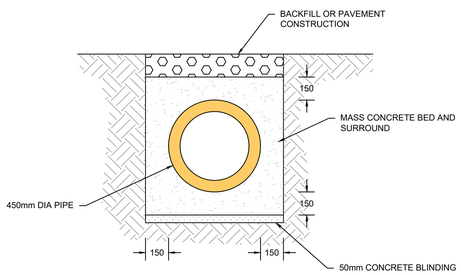
DETIAL J: OUTFALL TO RED JACKET PIL
SCALE 1:50



DETIAL K: FILTER STRIP
SCALE 1:50



DETIAL L: CATCHPIT
SCALE 1:50



DETAIL M - **450mm DIA PIPE BEDDING DETAIL**
SCALE 1:20

0 1m 1.5 2
Metres 1:20

0 1 2m 3 4 5
Metres 1:50

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LEGEND

Revision	By	Chk'd By	Date	Comments
0	AB	IW	23/05	

GERALD D HARRIES AND SONS LTD

SLR
FULMAR HOUSE
BEIGNON CLOSE
OCEAN WAY
CARDIFF. CF24 5PB
T: 029 2049 1010
F: 029 2048 7903
www.slrconsulting.com

Site: ASPHALT PLANT AT LLANDARCY

Project: SURFACE WATER MANAGEMENT

Drawing Title: **DRAINAGE DETAILS**

Scale: 1:50 (or as shown) @ A1
Date: 31 May 2023
Drawing Number: 005
Revision: 0

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EUROPEAN OFFICES

AYLESBURY
T: +44 (0)1844 337380

BELFAST
belfast@slrconsulting.com

BIRMINGHAM
T: +44 (0)121 2895610

BONN
T: +49 (0)176 60374618

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 9064280

CARDIFF
T: +44 (0)2920 491010

CHELMSFORD
T: +44 (0)1245 801630

CORK
T: +(021) 240 9000

DUBLIN
T: +353 (0)1 296 4667

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: +44 (0)1392 490152

FRANKFURT
frankfurt@slrconsulting.com

GLASGOW
glasgow@slrconsulting.com

GRENOBLE
T: +33 (0)6 23 37 14 14

KILKENNYY
kilkenny@slrconsulting.com

LEEDS
T: +44 (0)113 5120293

LONDON
T: +44 (0)203 8056418

MAIDSTONE
T: +44 (0)1622 609242

MANCHESTER
T: +44 (0)161 8727564

NETHERLANDS
T: +31 6 28 02 18 80

NEWCASTLE UPON TYNE
T: +44 (0)1844 337380

NOTTINGHAM
T: +44 (0)115 9647280

SHEFFIELD
T: +44 (0)114 2455153

SHREWSBURY
T: +44 (0)1743 239250

SPAIN
T: +34 6 82 04 83 01

STIRLING
T: +44 (0)1786 239900

WORCESTER
T: +44 (0)1905 751310

EUROPEAN OFFICES

AYLESBURY
T: +44 (0)1844 337380

BELFAST
belfast@slrconsulting.com

BIRMINGHAM
T: +44 (0)121 2895610

BONN
T: +49 (0)176 60374618

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 9064280

CARDIFF
T: +44 (0)2920 491010

CHELMSFORD
T: +44 (0)1245 392170

CORK
T: ++353 (0) 21 240 9000

DUBLIN
T: +353 (0)1 296 4667

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: +44 (0)1392 490152

FRANKFURT
frankfurt@slrconsulting.com

GRENOBLE
T: +33 (0)6 23 37 14 14

LEEDS
T: +44 (0)113 5120293

LONDON
T: +44 (0)203 8056418

MAIDSTONE
T: +44 (0)1622 609242

MANCHESTER
T: +44 (0)161 8727564

NEWCASTLE UPON TYNE
T: +44 (0)1844 337380

NOTTINGHAM
T: +44 (0)115 9647280

SHEFFIELD
T: +44 (0)114 2455153

SHREWSBURY
T: +44 (0)1743 239250

STIRLING
T: +44 (0)1786 239900

WORCESTER
T: +44 (0)1905 751310