Client:	Owner's Engineer:	Local Designer:	Environm. Consultant:

PROJECT: **124054 WEPA VESTA UK BRIDGEND**

CLIENT: **WEPA UK**

PHASE: **PLANNING APPLICATION**

DOCUMENT: **AIR QUALITY ASSESSMENT**

ID: **59200-0048**

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1.0 Introduction and Scope

1.1.1 WEPA UK Limited is the UK subsidiary of the WEPA Group headquartered in Germany. Bridgend Paper Mill was built in 1950, over the following decades the site passed through several owners. From 2016 it has been invested in new modern lines and technical equipment ensuring Bridgend remains at the global forefront of the paper industry. In 2019 WEPA built a second paper machine called “Neptune”. Construction was completed in 2022.

1.1.2 WEPA UK is committed to bringing further inward investment to the Bridgend area through the development of a new paper machine (called Vesta) in an environmentally acceptable and sustainable manner.

1.1.3 The existing paper machine “Jupiter” was built in the 1970s and it has a high energy demand that is not sustainable anymore. In order to enhance the production capacity, produce higher paper quality and reduce the energy consumption, the existing paper machine will be replaced by the more energy efficient Vesta paper machine.

1.1.4 The Vesta machine is based on best available technology (BAT) and designed to produce a high-quality product with low energy consumption and minimal environmental impact. The replacement will reduce the overall environmental footprint of tissue production by saving energy and CO_2. Before commissioning the new “Vesta” machine, the old machine “Jupiter” will be shut down and dismantled. The Jupiter building will be re-used as jumbo reel storage.

1.1.5 As energy consumption on site has been reduced considerably in the past, the Applicant will replace the existing CHP plant with a new boiler house, which will house two new gas boilers and ancillary equipment (Planning application P/24/406/FUL).

1.1.6 As the new Vesta paper machine consumes significantly less energy than the existing Jupiter machine, no additional air emissions are expected to occur when operating.

1.1.7 The future traffic conditions will remain unchanged for the “Vesta” project with the machine being a direct upgrade to the previous “Jupiter” machine with no increase in staff number necessary, therefore, the development will not generate any additional traffic movements from staff or deliveries.

1.1.8 The existing site access and the servicing access to the east will remain unchanged for the “Vesta” project.

1.1.9 Consequently, no additional traffic related air emissions are expected to result from the operation of the new development.

1.1.10 In view of the above, this assessment only considers impacts resulting from the construction phase of the development.

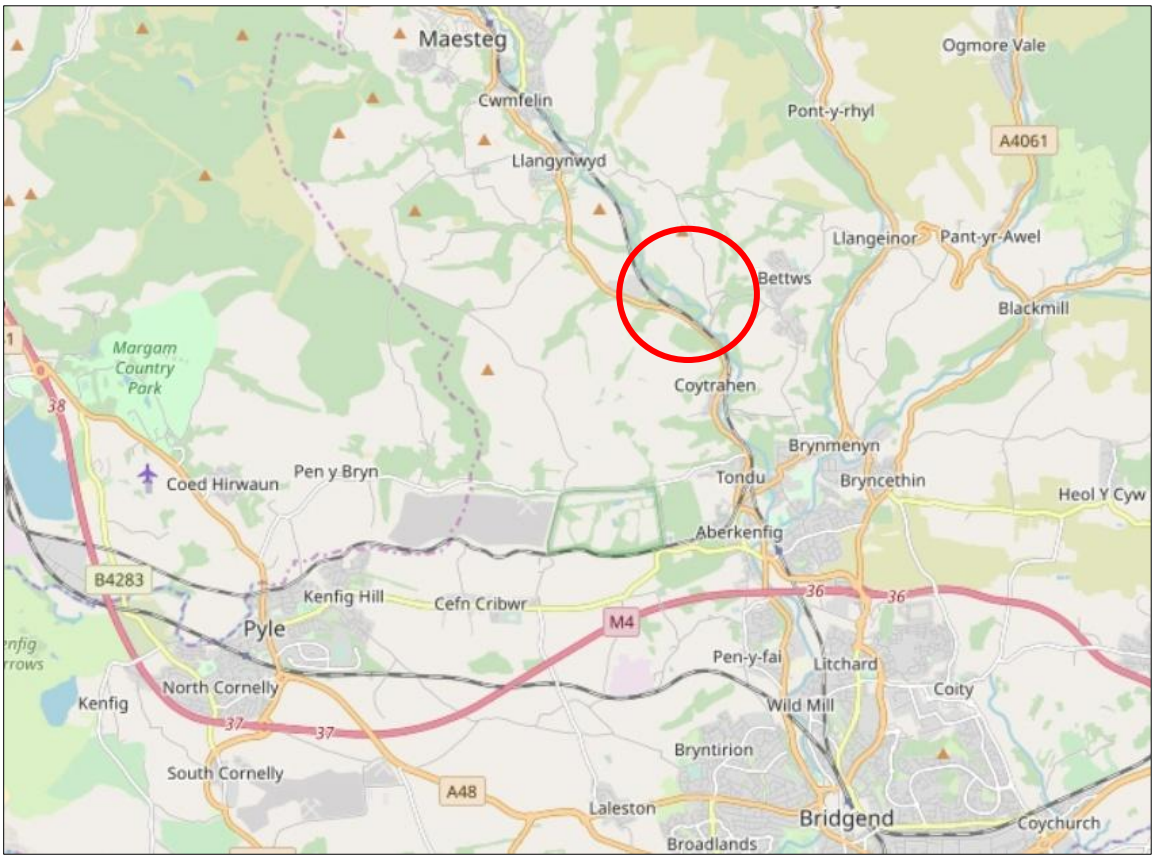
2.0 Description of the Development

2.1 Site Location

2.1.1 The proposed development site is located on the site of the existing Bridgend mill site approximately 5 km to the north of Bridgend town centre, in an area bound to the south and to the west by the A4063, to the east by the River Llynfi, and to the north by open farmland.

2.1.2 The Bridgend site covers a total area of around 25 hectares of which buildings and other hardstanding areas extend to approximately 16 ha.

Figure 2.1-1: Site Location



Source: Open Street Maps

2.2 Construction Phase

2.2.1 As part of the engineering design work, a detailed programme for the development will be determined. Subject to planning permission, construction work is planned to start in 2026. The construction and commissioning phases of the proposed plant are expected to last approximately 15 months. Standard construction techniques for buildings, roads and pavements, lighting, utility services and telecommunications will be adopted. The full details on site construction are currently not available but would be provided as part of the final project design, depending on the equipment of the contractor selected. The construction workforce peak is anticipated to be between 100 and 120 personnel, however average numbers would be of the order of 70 to 90.

2.2.2 Standard construction techniques for buildings, roads and pavements, lighting, utility services and telecommunications will be adopted. The full details on all site construction activities are currently not available but would be provided as part of the final project design, depending on the equipment of the contractor selected.

2.2.3 Typical construction activities include

- Site preparation: Prior to the levelling of the site, topsoil will be stripped and removed from the site. Excavations will be required to construct foundations, trenches, buried services and basement structures, and to create temporary construction facilities and working areas. On completion of the construction phase the laydown area will be returned to an appropriate state.
- Foundation piling: It will be necessary to undertake piling for the foundations due to the heavy loading and the tight tolerance on settlement.
- Civil engineering works will be required to create further foundations, buildings, services, roads etc.
- Steel erection – of structural steel frameworks.
- Mechanical plant: Plant and equipment will be located on foundations in the main construction areas, using a range of cranes and mobile plant and also includes the on-site assembly of any tanks, pipework and storage vessels.
- Electrical and Control: Electrical equipment, and control and instrumentation systems will be installed once the building enclosure has been completed.

2.2.4 For excavation works, several excavators and dump trucks will be in operation. After the main excavation works boring machines for pile foundations will be on site for a period of approximately 3 months.

2.3 Access

2.3.1 The existing WEPA site has two access points. One at the north-western end of the site, which, through the development of the site, was upgraded in 2019. In order to facilitate the development of the Neptune paper machine in 2019, a second vehicle access point has been constructed at the southern end of the site, primarily to allow HGV access to the site.

Figure 2.3-1: Main Site Access

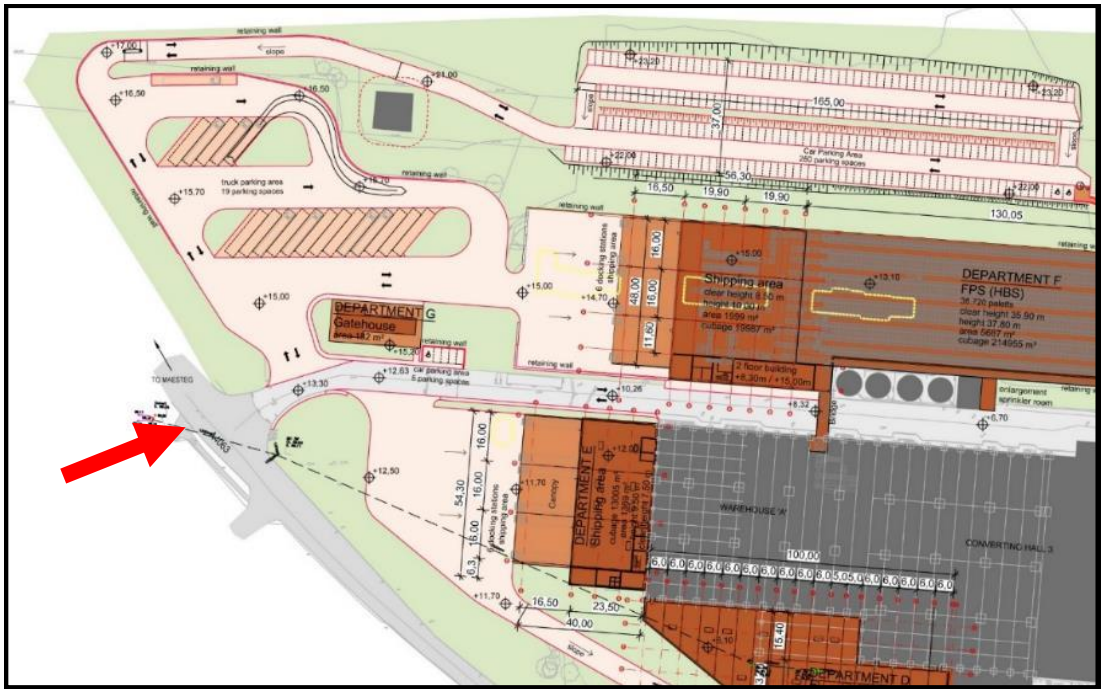
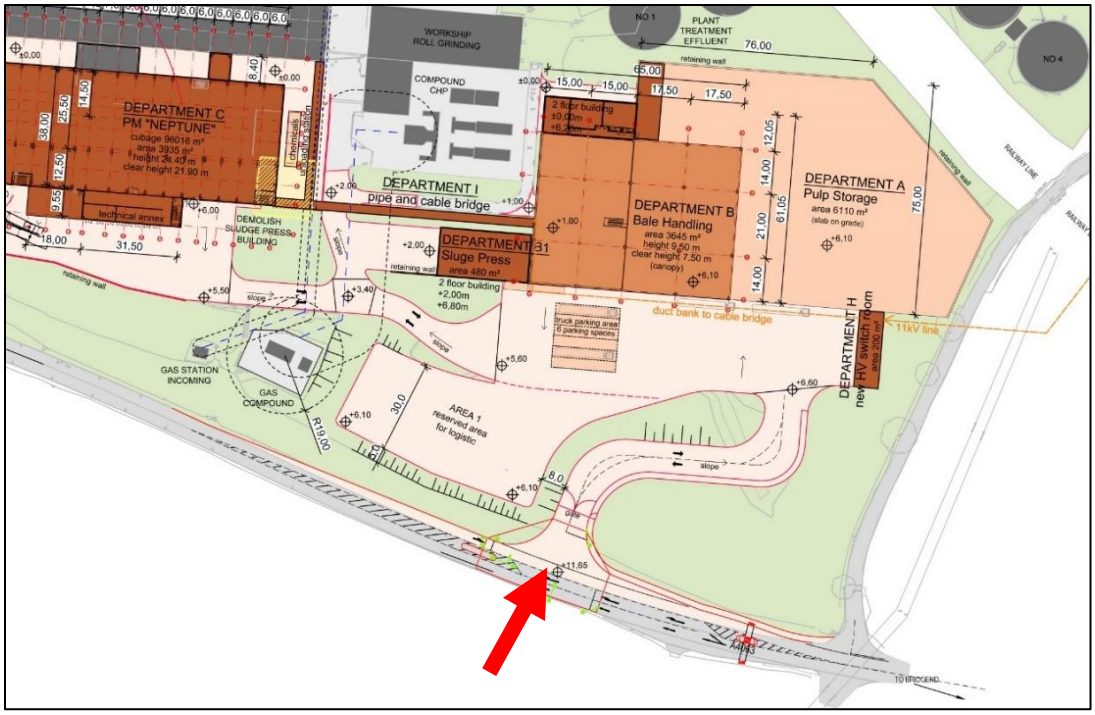


Figure 2.3-2: Secondary Site Access



2.4 Construction Management

2.4.1 Construction management would be undertaken by an approved and experienced contractor or contractors, in accordance with a Construction Environmental Management Plan (CEMP). The CEMP would be maintained as a 'live' document that would be updated throughout the planning and construction process, taking account of proposed mitigation and other planning commitments as required.

Construction Hours of Working

2.4.2 The following hours of operation are proposed for the construction works unless otherwise agreed in writing by the relevant planning authority:

- Monday to Friday – 07:00 - 19:00 hours; and
- Saturdays – 07:00 – 16:00.

Construction Traffic

2.4.3 The traffic effect of construction of the proposed development is limited to a finite period (approx. 15 months) and will be along the traffic routes employed by haulage vehicles, construction vehicles and employees' vehicles (particularly Bridgend). The principal construction activities with transportation implications are:

- removal of excavated material,
- delivery of materials for new development, and
- movements of heavy plant.

3.0 Assessment Methodology

3.1 Legislation

Applicable Public Exposure

3.1.1 In accordance with Department for Environment, Food and Rural Affairs' (DEFRA) technical guidance on Local Air Quality Management (LAQM.TG(16)) which is applied by the Welsh Assembly, the AQOs should be assessed at locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective.

Local Air Quality Management

3.1.2 Section 82 of the Environment Act 1995 (Part IV) requires Local Authorities (LA) to periodically review and assess the quality of air within their administrative area. The reviews have to consider the present and future air quality and whether any AQALs prescribed in regulations are being achieved or are likely to be achieved in the future.

3.1.3 Where any of the prescribed AQALs are not likely to be achieved the authority concerned must designate an Air Quality Management Area (AQMA). For each AQMA the LA has a duty to draw up an Air Quality Action Plan (AQAP) setting out the measures the authority intends to introduce to deliver improvements in local air quality in pursuit of the AQAL. As

such, LAs, have formal powers to control air quality through a combination of LAQM and by use of their wider planning policies.

Legislation for the Protection of Nature Conservation Sites

3.1.4 Sites of nature conservation importance at a European, national and local level, are provided environmental protection, including from atmospheric emissions by the legislation as indicated in Table 3.1-1.

Table 3.1-1: Legislation for the Protection of Nature Conservation Sites

Nature Conservation Sites	Legislation
European Sites Special Areas of Conservation (SAC) candidate Special Areas of Conservation (cSAC) Special Protection Areas (SPA) potential Special Protection Areas (pSPA) Ramsar sites Marine Protection Areas.	The Conservation of Habitats and Species Regulations (2010); known as the 'Habitats Regulations'
Sites of Special Scientific Interest (SSSI)	The Countryside and Rights of Way (CRoW) Act 2000
National Nature Reserves (NNR) Local Nature Reserves (LNR) local wildlife sites (LWS) ancient woodland (AW)	The Environment Act 1995; and the Natural Environment and Rural Communities Act (NERC) 2006.

General Nuisance Legislation

3.1.5 Part III of the Environmental Protection Act (EPA) 1990 (as amended) contains the main legislation on Statutory Nuisance and allows local authorities and individuals to take action to prevent a statutory nuisance. Section 79 of the EPA defines, amongst other things, smoke, fumes, dust and smells emitted from industrial, trade or business premises so as to be prejudicial to health or a nuisance, as a potential Statutory Nuisance.

3.1.6 Fractions of dust greater than 10µm (i.e. greater than PM_{10}) in diameter typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the UK AQS. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.

3.2 Construction Dust Assessment Methodology

Predicting Risk

3.2.1 The assessment of risk is determined by considering the predicted change in conditions as a result of the development. The risk category for potential dust effects arising from site works is defined into 4 No. potential activities:

- demolition;
- earthworks;
- construction; and
- trackout.

3.2.2 The determination of risk categories presented above are based upon the descriptors presented within IAQM: *Guidance on the assessment of dust from demolition and construction*.

Sensitivity of Receptor

3.2.3 To determine the significance of dust effects associated with the construction phase of the development, an evaluation of the sensitivity of the surrounding area is required. Receptors can demonstrate different sensitivities to changes in their environment, and are classified as detailed within 6.2-1.

3.2.4 Quoted distances to the nearest receptor are from the dust emission sources. Where this is not known, receptor distances are determined from the site boundary. The risk category is based upon the distance of site works to the nearest receptor.

Table 3.2-1: Methodology for Defining Sensitivity to Dust Effects

Sensitivity of Area	Examples		
	Human Receptors		Ecological Receptors (A)
	Dust Soiling Effects	Health Effects of PM_{10}	
High	• users can reasonably expect an enjoyment of a high level of amenity; or • the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. • indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.	• locations where members of the public are exposed over a time period relevant to the air quality objective for PM10 (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). • Indicative examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.	• locations with an international or national designation and the designated features may be affected by dust soiling; or • locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain. • indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.
Medium	• users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or • the appearance, aesthetics or value of their property could be diminished by soiling; or • the people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. • indicative examples include parks and places of work.	• locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM10 (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). • indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM10, as protection is covered by Health • and Safety at Work legislation.	• locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or • locations with a national designation where the features may be affected by dust deposition. • indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.

Sensitivity of Area	Examples		
	Human Receptors		Ecological Receptors (A)
	Dust Soiling Effects	Health Effects of PM_{10}	
Low	• the enjoyment of amenity would not reasonably be expected; or • property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or • there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal • pattern of use of the land. • indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.	• locations where human exposure is transient. • indicative examples include public footpaths, playing fields, parks and shopping streets.	• locations with a local designation where the features may be affected by dust deposition. • indicative example is a local Nature Reserve with dust sensitive features.
(A) Only applicable if ecological habitats are present which may be sensitive to dust effects.			

Assessment of Impact Significance – Dust Effects

3.2.5 Table 3.2-2 to Table 3.2-4 illustrate how the sensitivity of the area may be determined for dust soiling, human health and ecosystem impacts, respectively. The highest level of sensitivity from each table should be recorded.

Table 3.2-2: Sensitivity of Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from Source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10 – 100	Medium	Medium	Low	Low
	1 – 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	<1	Low	Low	Low	Low

Table 3.2-3: Sensitivity of Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
High	>32µg/m^3	>100	High	High	High	Medium	Low
		10 – 100	High	High	Medium	Low	Low
		1 – 10	High	Medium	Low	Low	Low
	28 – 32µg/m^3	>100	High	High	Medium	Low	Low
		10 – 100	High	Medium	Low	Low	Low
		1 – 10	High	Medium	Low	Low	Low
	24 – 28µg/m^3	>100	High	Medium	Low	Low	Low
		10 – 100	High	Medium	Low	Low	Low
		1 – 10	Medium	Low	Low	Low	Low
	<24µg/m^3	>100	Medium	Low	Low	Low	Low
		10 – 100	Low	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
Medium	>32µg/m^3	>10	High	Medium	Low	Low	Low
		1 – 10	Medium	Low	Low	Low	Low
	28 – 32µg/m^3	>10	Medium	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
	24 – 28µg/m^3	>10	Low	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
	<24µg/m^3	>10	Low	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
Low	-	1	Low	Low	Low	Low	Low

Table 3.2-4: Sensitivity of Area to Ecological Impacts

Receptor Sensitivity	Distance from Source ((m) (A)	
	< 20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

(A) For trackout, the stand-offs should be measured from the side of the roads used by construction traffic

Defining the Risk of Impact

3.2.6 Table 3.2-5 to Table 3.2-8 illustrate how the dust emission magnitude should be combined with the sensitivity of the area to determine the risk of impacts with no mitigation measures applied.

Table 3.2-5: Risk of Dust Impacts – Demolition

Sensitivity of Area	**Dust Emission Magnitude**		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 3.2-6: Risk of Dust Impacts – Earthworks

Sensitivity of Area	**Dust Emission Magnitude**		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 3.2-7: Risk of Dust Impacts – Construction

Sensitivity of Area	**Dust Emission Magnitude**		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 3.2-8: Risk of Dust Impacts – Trackout

Sensitivity of Area	**Dust Emission Magnitude**		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

4.0 Baseline Conditions

4.1 Introduction

4.1.1 As there are no additional air emissions associated with the operation of the proposed development, a detailed description of baseline conditions is not required.

4.2 Sensitive Receptors

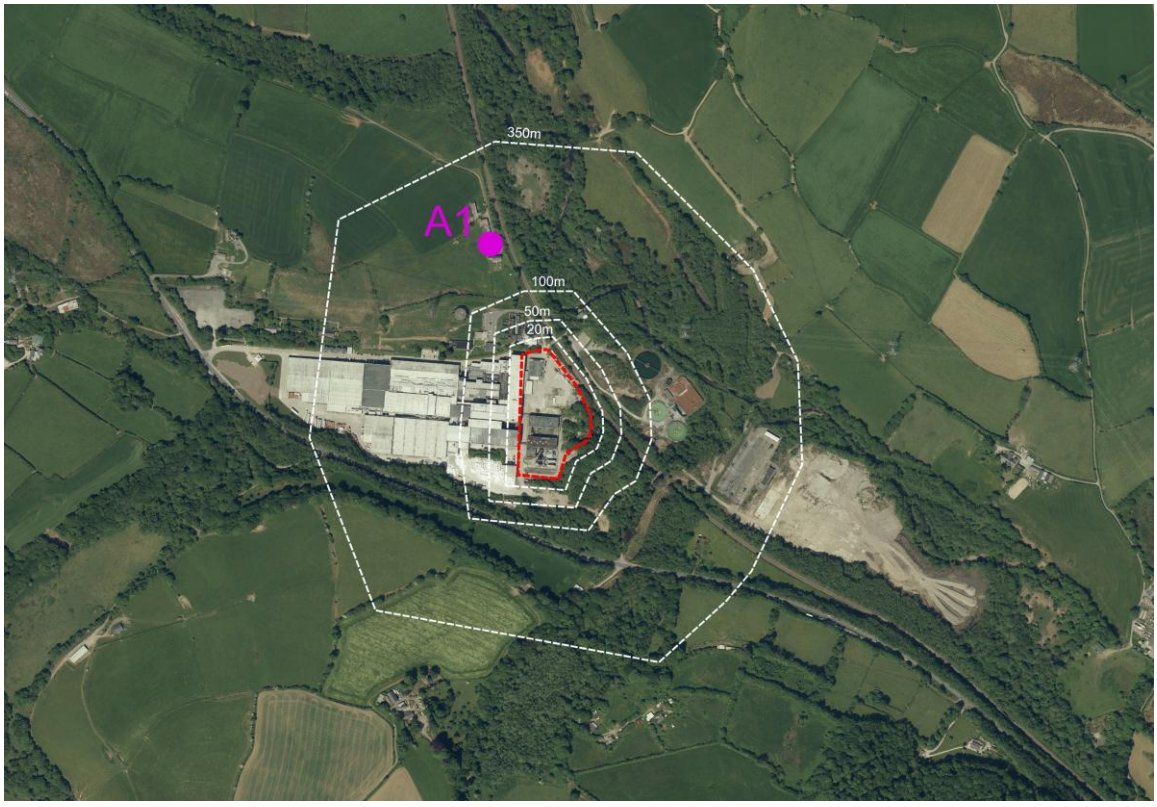
Construction Dust Receptor

4.2.1 In terms of human receptors, the main receptors likely to be affected by the generation of construction dust are those existing receptors within approximately 350m of the development site boundary. Reference should be made to Figure 4.2-1 for an illustration of buffer zones of sensitive receptors with the potential to be impacted upon by construction phase dust in accordance with the stated IAQM assessment methodology.

Table 4.2-1: Sensitive Receptor (Construction dust)

ID	Description	Receptor type	NGR	
A 1	Farmhouse Brynllywarch-Fach	Residential	287469	187416

Figure 4.2-1: Site Setting and Construction Phase Receptor



Red line = Site boundary, white lines = buffers from site boundary (20m, 50m, 100m, 350m)

4.3 DEFRA Mapped Background Concentrations

4.3.1 Background pollutant concentration data on a 1km x 1km spatial resolution is provided by DEFRA through the UK Air Information Resource (AIR) website and is routinely used to support LAQM and Air Quality Assessments.

4.3.2 Mapped background concentrations of PM_{10} were downloaded for the grid square containing the Application Site and the relevant human receptor (A1 in Figure 4.2-1). Concentrations are based upon the 2021 base year DEFRA update.

Table 4.3-1: DEFRA mapped background concentration PM_{10}

Grid Square	PM_{10} Background Concentration ($\mu g/m^3$)
x288500, y187500	9.70

4.3.3 In relation to the construction phase dust assessment, this included consideration of any ecological designation within 50m of the Application Site boundary, or 50m of any road projected to witness construction phase road traffic movements, that could potentially be affected by dust from the construction phases of the proposed development.

4.3.4 A search within 50m of the development boundary / any road projected to witness construction phase road traffic movements identifies no receptors.

4.3.5 The AERA Guidance Note requires that designated ecological sites should be screened against relevant standards if they are located within the following set distances from the facility:

- Special Protection Areas (SPAs), Special Areas of Conservation (SACs) or Ramsar sites within 10km of the installation; and
- Sites of Special Scientific Interest (SSSIs) within 2km of the installation.

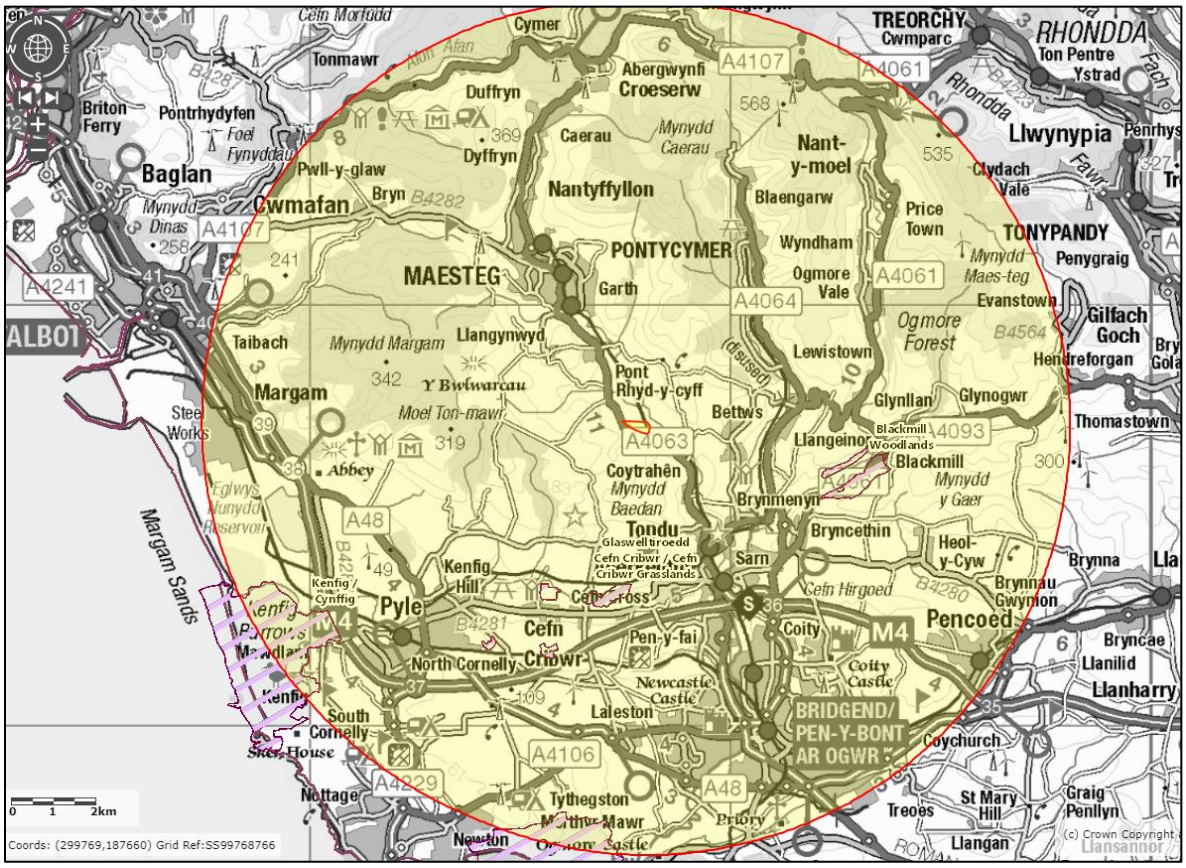
4.3.6 Details of the sites within these screening distances are presented in Table 4.3-2 and locations in Figure 4.3-1 based 10km site search radii.

4.3.7 It is noted that there are no relevant designated ecological sites within a 2km site search radius.

Table 4.3-2: Designated Ecological Sites

Receptor	Site	Designation	Most sensitive APIS Habitat classification
R1	Kenfig / Cynffig	SAC	Coastal stable dune grasslands - acid type
R2	Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands	SAC	Non-Mediterranean dry acid and neutral closed grassland
R3	Blackmill Woodlands	SAC	Acidophilous Quercus-dominated woodland

Figure 4.3-1: Ecological Sites – 10km Site Search



4.3.8 The assessment methodology considers three separate dust impacts with account being taken of the sensitivity of the area that may experience these effects:

- annoyance due to dust soiling;
- the risk of health effects due to an increase in exposure to PM_{10}; and
- harm to ecological receptors.

4.3.9 The first stage of the assessment involves a screening to determine if there are sensitive receptors within threshold distances of the site activities associated with the construction phase of the scheme. No further assessment is required if there are no receptors within a certain distance of the works; 350m for human receptors and 50m for designated ecological receptors.

4.3.10 The dust emission class (or magnitude) for each activity is determined on the basis of the guidance, indicative thresholds and expert judgement. The risk of dust effects arising is based upon the relationship between the dust emission magnitude and the sensitivity of the area. The risk of impact is then used to determine the mitigation requirements

5.0 Assessment of Effects - Construction Dust Assessment

5.1.1 Construction activities will include:

- material export and import;
- temporary stockpiling of materials;
- groundwork for foundations and services;
- construction of buildings;
- landscaping works; and
- vehicle movements (with the potential to track-out material from site).

5.1.2 The following subsections provide a consideration of potential construction dust and conclude with a determined emission class and risk category, from each of the categories identified by the IAQM Guidance.

Assessment Screening

5.1.3 As shown in Figure 4.3-1 there is only 1 ‘human receptor’ (the Farmhouse Brynllywarch-Fach) within 350m of the Application Site but no designated habitat sites within 50m of the Application Site boundary or within 50m of the Application Site entrance / 500m of the roads anticipated to witness construction traffic movements.

5.1.4 Therefore, an assessment of construction dust on ecological receptors can be screened out from this assessment but an assessment of construction dust at human receptors is required.

Potential Dust Emissions Magnitude

5.1.5 The most significant potential source of dust emissions during construction would be the earthworks and trackout activities. Dust is potentially generated by the action of heavy vehicles (bulldozer, front-end loader, hydraulic excavator, and dump trucks), as well as by the movement of the vehicles on potentially dusty surfaces. Handling and storage of construction materials (aggregates / hard core), haulage across unsurfaced areas are also potential sources of dust generation.

5.1.6 The potential dust emission magnitude for each activity is described in Table 5.1-1.

Table 5.1-1: Potential Dust Emission Magnitude

Activity	Comments	Dust Emission Magnitude
Demolition	Prior to construction of the new paper machine at the Application Site, some existing buildings and structures are required to be demolished, including a concrete slab and asphalt / concrete areas associated with current roads and hard-standing. Concrete products to be demolished represent a high-potential for dust generation. All material generated during the demolition of these buildings / structures will be exported from site. Demolition activities are required on a total building volume of <10,000m^3. Demolition works are currently projected to occur over a short period (<4-weeks). Demolition works are currently projected to occur in the summer of 2026. Therefore, some demolition activities will occur over 'summer' months, corresponding to lower periods of rainfall and reduced potential for natural dust suppression. Therefore, dust emission magnitude is calculated to be 'small'.	Small
Earthworks	The proposals comprise the development of a new paper machine and associated infrastructure. Site earthworks are required over an area of approximately 5,000m^2 with assumed soil types representing a high-risk potential for suspension when dry due to small particle size. Given the size of the site, between 2-3 heavy earth moving vehicles are considered to be required on Application Site at once. Given the size of the site, it is estimated that construction phase activities will occur over a period of approximately 4 months. Therefore, some earthworks activities may occur over 'summer' months, corresponding to lower periods of rainfall and reduced potential for natural dust suppression. Therefore, dust emission magnitude is calculated to be 'medium'.	Medium
Construction	The total building volume associated with the proposed new paper machine and associated infrastructure is predicted to be between 50,000m^3 and 80,000m^3. Foundations will be as both strip foundations and piling based upon geotechnical specifications. Construction will be as pre-cast reinforced concrete wall panels, steel columns / girders / purlins, sheet steel roofing panels and concrete slabs. The majority of concrete products used on-site will arrive as pre-cast / pre-form. Concrete will additionally arrive on site as Readymix. However, a small portion of concrete may additionally be mixed on-site. Concrete has a high potential for dust generation. It is estimated that construction phase activities will occur over a period of approximately one year. Therefore, dust emission magnitude is calculated to be 'large'.	Large

Activity	Comments	Dust Emission Magnitude
Trackout	Construction vehicles will most likely access the site via the existing highway network from the south (via A4063, ultimately in the direction of the M4). No details are available at the time of assessment on the number of additional HDV movements associated with construction works in each phase, however, given the scale and nature of works required, there is considered to be >20HDV outward movements in any worst-case day. Due to the size of the site the unpaved road length is considered to be >50m. Therefore, dust emission magnitude is calculated to be 'medium'.	Medium

Sensitivity of the Area

5.1.7 The sensitivity of the area takes account of a number of factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM_{10}, the local background concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

5.1.8 The sensitivity of the area and the factors considered are presented in Table 5.1-2.

Table 5.1-2: Sensitivity of the Area

Sensitivity to:	Comments	Sensitivity
Dust Soiling Impacts	The surroundings predominantly comprise rural / agricultural land with sparsely populated associated residential dwellings. The residential dwelling is classified as of high sensitivity to dust soiling. There is 1 high sensitivity receptor within 350m of the Application Site boundary.	Low
Human Health Impacts	The background PM_{10} concentration for the maximum 1km^2 grid square containing the Application Site and surrounding receptors is estimated to be approximately 10.0µg/m^3, based upon 2021 mapped background estimates presented in Table 6.2-3 (i.e. falls into the <24µg/m^3 class) and there are between 1 – 10 high sensitivity receptors within 350m of the Application Site boundary.	Low

Risk of Impacts (Unmitigated)

5.1.9 The outcome of the assessment of the potential 'magnitude of dust emissions', and the 'sensitivity of the area' are combined in the table below to determine the risk of impact which is used to inform the selection of appropriate mitigation.

Table 5.1-3: Risk of Dust Impacts

Potential Impact	Demolition	Earthworks	Construction	Trackout
Dust Soiling Impacts	Negligible Risk	Low Risk	Low Risk	Low Risk
Human Health Impacts	Negligible Risk	Low Risk	Low Risk	Low Risk
Ecological Impacts	n/a	n/a	n/a	n/a

Construction Phase – Vehicular Pollutants

5.1.10 Road traffic emissions associated with vehicle movements, particularly HDV movements, during the construction phase of the development have the potential to result in increased concentrations of combustion related pollutants, including NO_2 and PM_{10} in the vicinity of the development site.

5.1.11 Guidance provided by EPUK and IAQM, states that a detailed assessment of potential air quality impacts should be undertaken if the following criteria are met on any link affected by a proposed development:

- change in 24-hour LDV flows of more than 100 AADT within or adjacent to an AQMA; or
- change in 24-hour HDV flows of more than 25 AADT within or adjacent to an AQMA.

5.1.12 The development quantum is not anticipated to result in a significant increase in movements or be above the EPUK and IAQM criterion. The duration of movements will be short-term in nature and are not considered further within the context of this assessment. Therefore, in accordance with the criterion presented within EPUK and IAQM guidance, additional road vehicle trips during the construction phase of the scheme can be screened out as they *'can be considered to have insignificant effects*' on air quality.

6.0 Mitigation Measures

6.1.1 An assessment of the significance of impacts associated with construction phase dust has been undertaken in accordance with the IAQM methodology. A summary of the risk category associated with each identified source of construction phase dust is presented within Table 6.1-1, for the purposes of identifying mitigation requirements.

6.1.2 Potential dust effects during the construction phase considered to be temporary in nature. The impacts are determined to be temporary as they will only potentially occur throughout the construction phase and short-term because these will only arise at particular times when certain activities and meteorological conditions for creating the level of magnitude predicted combine.

6.1.3 The risk of dust soiling effects is assessed as 'negligible risk' from demolition, and 'low risk' from earthworks, construction and trackout activities. The risk of human health effects from

PM_{10} is assessed as 'negligible risk' from demolition, and 'low risk' from earthworks, construction activities and trackout activities.

6.1.4 In order to control potential impacts, the mitigation measures presented within Table 6.1-1 are proposed for the scheme. These mitigation measures should be secured by planning condition.

Table 6.1-1: Construction Dust Mitigation Measures

Site Application	Mitigation Measures
General Dust Management	Record all dust and air quality complaints and take appropriate measures to reduce emissions
	Record any exceptional; incidents that cause dust off site.
	Undertake daily visual inspection of dust soiling and dust generation and record in site log (available for the local authority if requested)
	Ensure an adequate supply of water is available onsite for effective dust suppression. The site manager will be present during all working hours to manage the activity of dust suppression
	Use enclosed chutes and conveyors and cover skips
	Minimise drop heights from conveyors, loading shovels and other material handling equipment
	Impose a site speed limit of 10mph on unpaved haul roads
	Ensure all vehicles engines are switched off when stationary
	Plan site layout so machinery is located away from receptors as far as possible
	Enclose specific operations where there is a high potential for dust production
	Avoid site runoff of water or mud
	Keep site fencing, barriers and scaffolding clean using wet methods
	Remove material that have the potential to produce dust from the site as soon as possible
	Install construction warning signage either side of the site entrance warning of 'mud on the road'
	Safety, Health & Environmental Briefings (SHEB's) will be provided to site operatives at least monthly and will reflect the actual work being undertaken on site. Records must be maintained of the briefings
	All operatives/visitors on site receive an Induction prior to commencing work on site
	Environmental Incidents and complaints will be recorded in the incident book on site and records forwarded to the divisional office and Group SHE department as required. Complaints will be dealt with locally by the Division and confirmation of action provided on or attached to the incident report form
	A power washing area will be installed behind the main compound alongside the delivery access road so that any vehicles leaving the site that require it can clean their tyres and undercarriage to wash off mud and debris before they exit
	All site managers attend the Site Management Safety Training Scheme (SMSTS) course on site safety. Part of this course covers protection against fugitive dust

Site Application	Mitigation Measures
Demolition	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust)
	Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
	Avoid explosive blasting, using appropriate manual or mechanical alternatives
	Bag and remove any biological debris or damp down such material before demolition.
Earthworks	Re-vegetate earthworks and soil stockpiles to stabilise surfaces as soon as practicable
	Cover stockpiles if not vegetated and only remove in small areas during work
	Avoid Double Handling of material
	Cease operations during high winds in the direction of sensitive receptors
Construction	Avoid scabbling (roughing of concrete surfaces) if possible
	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
Trackout	Use water assisted dust sweepers on the access and local roads to removed tracked out material is necessary. A road sweeper vehicle will be employed to visit site and clean the site roads each day to prevent a build-up of mud, grit and dirt. This will take place every afternoon prior to the close of site and will also be on call as necessary through each day should there be a need for its services
	Avoid dry sweeping large areas
	Ensure vehicles entering and leaving sire are covered to prevent escape of materials during transport
	A power washing area will be installed on the main site road near the site entrance so that other construction vehicles exiting can also be cleaned down before entering the public highway
	Access gates to be located at least 100m from receptors where possible
	All vehicles will be inspected prior to leaving site to ensure limited mud will be placed on the carriage way

7.0 Residual Effects

7.1 Construction Phase Dust

7.1.1 On the basis that the mitigation measures outlined in Table 6.5-1 are implemented, the residual effects from activities generating construction phase dust are predicted to be 'not significant' in accordance with the stated IAQM guidance.

7.2 Construction Phase Road Traffic Emissions

7.2.1 Potential air quality impacts associated with construction phase road traffic emissions (principally HDV movements) have been screened out for further assessment with associated impacts on air quality predicted to result in an 'insignificant' effect. Therefore, mitigation measures are not considered to be required.

7.3 Construction Phase NRMM Emissions

7.3.1 LAQM.TG(16) guidance states that with the application of suitable control measures and site management, exhaust emissions from on-site NRMM are "*unlikely to make a significant impact on local air quality. In the vast majority of cases they will not need to be quantitatively assessed*".

- The following controls would apply to NRMM (Non Road Mobile Machinery)
- all NRMM should use fuel equivalent to ultralow sulphur diesel;
- all NRMM should comply with either the current or previous EU Directive Staged Emission Standards;
- all NRMM should be fitted with Diesel Particulate Filters (DPF) conforming to defined and demonstrated filtration efficiency (load/duty cycle permitting);
- the on-going conformity of plant retrofitted with DPF, to a defined performance standard; and
- implementation of fuel conservation measures including instructions to throttle down or switch off idle construction equipment; switch off the engines of trucks while they are waiting to access the site and while they are being loaded or unloaded, ensure equipment is properly maintained to ensure efficient fuel consumption.

7.3.2 Successful implementation of the above mitigation measures, which should be secured by planning condition, would ensure that emissions from the construction phase and NRMM used during construction are 'not significant'.

7.4 Cumulative Impacts

7.4.1 There is the potential for cumulative construction phase dust impacts to occur, arising during the construction of both the proposed Application Site and any other surrounding developments which occur within a combined 350m site buffer radius.

7.4.2 For a potential cumulative construction phase dust impact to occur, the Application Site and any adjacent developments would need to be demolished / constructed either concurrently or sequentially. However, it is noted that both the Application Site and any adjacent developments to be demolished / constructed would be required to implement construction phase dust mitigation measures as stated within the IAQM guidance and as detailed above

in Table 6.1-1. Therefore, the application of the above mitigation measures would produce a negligible effect and be considered to be ‘not significant’. Cumulative effects are therefore considered to be ‘not significant’.

8.0 Summary and Conclusion

8.1.1 The assessment has considered the significance of potential effects on the local air quality and amenity as a result of the proposed development of the Application Site. The proposed development incorporates the replacement of an existing paper machine by a new more energy efficient paper machine.

8.1.2 Operational phase emissions have been screened out as the operation of the new paper machine is not associated with additional road traffic. Moreover, the new paper machine will consume less energy resulting in a reduction of air emissions from power generation.

8.1.3 A qualitative assessment of the potential dust impacts during the construction phase of the development has been undertaken. Through good practice and implementation of appropriate mitigation measures, it is expected that the release of dust would be effectively controlled and mitigated, with resulting impacts considered to be ‘not significant’. All dust impacts are considered to be temporary and short-term in nature.

8.1.4 Due to the low additional number of HDV trips anticipated during the construction phase of the development, these are predicted to result in an ‘insignificant’ effect on air quality from road vehicle emissions. Furthermore, emissions from plant / NRMM on-site is predicted to result in a ‘not significant’ impact on air quality.

8.1.5 As such, it is not considered that air quality represents a material constraint to the development proposals, which conform to the principles of Planning Policy Wales, and the Bridgend County Borough Council Local Plan.