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Land off Ewenny Road, Maesteg
Air Quality Assessment

November 2013

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A. Location of BCBC’s NO₂ Monitoring Sites (Maesteg Town Centre)

1. Introduction

1.1 General Description

Waterman Transport & Development have been commissioned to undertake an air quality assessment of a proposed mixed use development within the County Borough of Bridgend.

The applicant is seeking outline planning permission for the redevelopment of a former industrial site, within the town of Maesteg. The proposals are for a mixed use development consisting of:

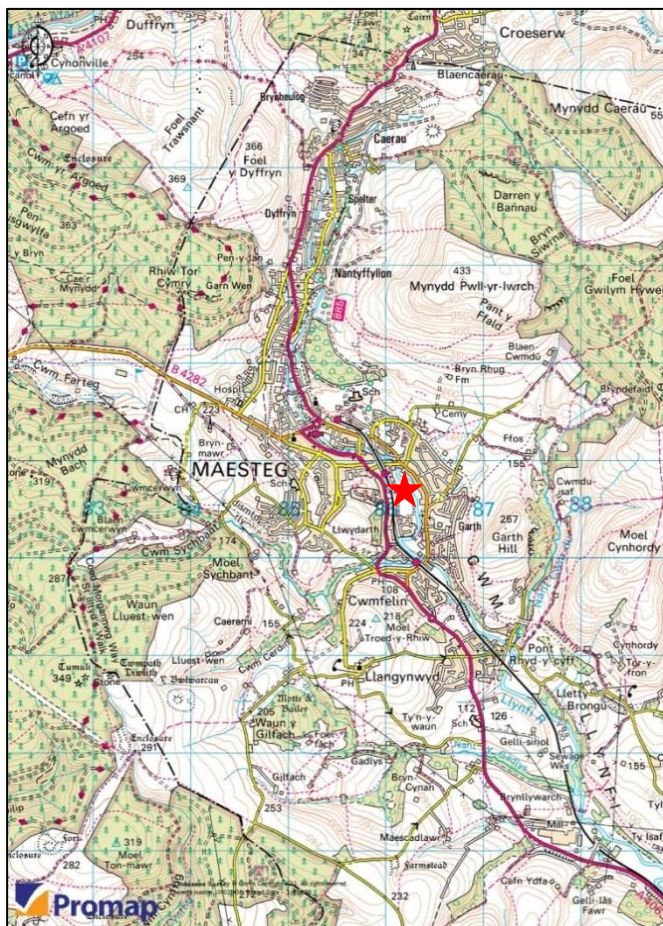
- 2 x Fast Food Restaurants – 325m²
- Family Pub / Restaurant – 557m²
- 3 x Non-food retail units – 147m²
- Bulky Goods Retail – 464m²
- Food Retail – 557m²
- Extra Car Unit – 40 units
- 6 x B1 Employment Units – 232m²
- 8 x B1 Employment Units – 116m²
- B1 Employment unit – 929m²
- Residential Development – 115 units

The Site is bounded to the west by Oakwood Drive, to the north by a builders yard with residential properties beyond, to the east by the River Llynfi, and to the south by a residential estate.

The Site can currently be accessed via 6no. vehicular access points off Oakwood Drive and subsequently Ewenny Road. Ewenny Road can either be accessed by A4063 Bethania Street to the west, or B4282 Bridgend Road to the east.

A Site Location plan is included as Figure 1. The illustrative masterplan (GA2795 (05) 010) has been submitted with the outline planning application.

Figure 1: Site Location Plan



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Potential emissions from the construction activities, in terms of on-site plant/vehicle emissions and dust, have the potential to affect local air quality and cause nuisance, especially if dust is deposited onto surfaces such as cars and windows. In addition, vehicles driving into and exiting the Site, to access all uses proposed for the Development, have the potential to affect air quality along surrounding roads where sensitive uses exist.

Following review of the potential traffic impacts of the operational Development, the existing air quality and landuse in the area, and consultation with Bridgend County Borough Council (BCBC) it was determined that a quantitative Air Quality Assessment would not be required to accompany the planning application, however a summary report would be required which justifies why a quantitative assessment is not needed.

Section 2 of this report gives a summary of legislation and planning policy relevant to air quality. Section 3 provides details of the methodology this summary report is based on and Section 4 sets out the baseline conditions at and around the Site. The reasoning's as to why a quantitative assessment of air quality is not needed is presented in Section 5, together with a qualitative assessment of construction activities. Mitigation measures applicable to construction sites are presented in Section 6. A summary of this report is given in Section 7.

2. Air Quality Legislation and Planning Policy

2.1 European Legislation

Air pollutants at high concentrations can give rise to adverse effects on the health of humans and ecosystems. European Union (EU) legislation on air quality forms the basis for national UK legislation and policy on air quality.

The European Union Framework Directive 2008/50/EC on ambient air quality assessment and management came into force in May 2008 and had to be implemented by Member States, including the UK, by June 2010. The Directive aims to protect human health and the environment by avoiding, reducing or preventing harmful concentrations of air pollutants.

2.2 National Legislation

2.2.1 Air Quality Standards Regulations

The Air Quality Standards Regulations 2010 implement limit values prescribed by the Directive 2008/50/EC. The limit values are legally binding and the Secretary of State, on behalf of the UK Government, is responsible for their implementation.

2.2.2 The UK Air Quality Strategy

In a parallel process, the Environment Act 1995 required the preparation of a national air quality strategy setting health-based air quality objectives for specified pollutants and outlining measures to be taken by Local Planning Authorities (LPAs) in relation to meeting these (the Local Air Quality Management (LAQM) system).

The UK Air Quality Strategy (AQS), adopted in 1997, was subsequently reviewed and revised in 2000 as the Air Quality Strategy for England, Scotland, Wales and Northern Ireland. An amendment to the Strategy was published in 2003.

The current UK AQS was published in July 2007 and updates the original strategy to set out new objectives for local authorities in undertaking their local air quality management duties. The 2007 UK AQS introduces a national level policy framework for exposure reduction for fine particulates. Objectives in the current UK AQS are in some cases more onerous than the limit values set out within the relevant EU Directives and the Air Quality Standards Regulations 2010. In addition, objectives have been established for a wider range of pollutants.

The limit values and objectives of air pollutants relevant to this assessment are summarised in Table 1.

Table 1: Summary of Relevant Air Quality Limit Values and UK AQS Objectives

Pollutant	Standard		Objective Date
	Concentrations	Measured as	
Benzene	16.25µg/m ³	Running Annual mean	31/12/2003
	5µg/m ³	Annual mean	31/12/2010
1,3 Butadiene	2.2µg/m ³	Running annual mean	31/12/2003
Carbon monoxide (CO)	10 µg/m ³	Maximum daily running 8-hour mean	31/12/2003
Nitrogen dioxide (NO ₂)	200µg/m ³	1 hour mean not to be exceeded more than 18 times per year	31/12/2005
	40µg/m ³	Annual mean	31/12/2005
Particulate Matter (PM ₁₀)	50µg/m ³	24-hour mean not to be exceeded more than 35 times per year	31/12/2004
	40µg/m ³	Annual mean	31/12/2004
Particulate Matter (PM _{2.5})	Target of 15% reduction in concentrations at urban background locations	Annual mean	Between 2010 and 2020
	Variable target of up to 20% reduction in concentrations at urban background locations*	Annual mean	Between 2010 and 2020
	25 µg/m ³	Annual mean	01/01/2020

Note: * Aim to not exceed 18 µg/m³ by 2020

There are currently no statutory UK standards in relation to deposited dust and its propensity to cause nuisance. A deposition rate of 200mg/m²/day (averaged over a month) is sometimes used as a threshold value for potentially significant nuisance effects.

2.2.3 Local Authority Responsibility

Part IV of the Environment Act 1995 provides a system of Local Air Quality Management (LAQM) under which local authorities are required to review and assess the future quality of the air within their administrative boundaries by way of a staged process. In the event that this process suggests that any of the Air Quality Strategy Objectives will not be met by the target dates, the local authority must consider the declaration of an Air Quality Management Area (AQMA) and the subsequent preparation of an Air Quality Action Plan to improve the air quality in that area in pursuit of the Objectives. A summary of BCBC's review and assessment of air quality is provided in Section 4.

2.3 National Planning Policy

2.3.1 Welsh Assembly Government, Planning Policy Wales: Edition 5, November 2012

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Assembly Government (the Assembly Government). In regards to air quality, PPW states:

“The potential for pollution affecting the use of land will be a material consideration in deciding whether to grant planning permission. Material considerations in determining applications for potentially polluting development are likely to include:

- *location, taking into account such considerations as the reasons for selecting the chosen site itself;*
- *impact on health and amenity;*
- *the risk and impact of potential pollution from the development, insofar as this might have an effect on the use of other land and the surrounding environment (the environmental regulatory regime may well have an interest in these issues, particularly if the development would impact on an Air Quality Management Area or a SAC);*
- *prevention of nuisance;*
- *impact on the road and other transport networks, and in particular on traffic generation; and*
- *the need, where relevant, and feasibility of restoring the land (and water resources) to standards sufficient for an appropriate after use. (Powers under the Pollution Prevention and Control Act 1999 require an operator to return a site to a satisfactory state on surrender of an Integrated Pollution Prevention and Control Permit).”*

2.3.2 Welsh Assembly Government, People, Places, Futures: The Wales Spatial Plan, 2008 Update

The Wales Spatial Plan (WSP) was originally adopted in 2004 and provides a framework for development and investment in the region over the next 20 years. An update report was produced in 2008. Whilst there are no specific policies relating to air quality, the WSP 2008 Update notes that *“Spatial Plan Area Groups can take a number of actions which will help us all tackle climate change, but also promote a healthy and enjoyable environment in which to live and work, including by:...improving air quality, for example through an integrated approach to traffic management”*.

2.3.3 Environmental Protection UK: Planning for Air Quality, 2010

The Environmental Protection UK's (EPUK) Development Control: Planning for Air Quality (Update 2010) document advises that *“In arriving at a decision about a specific proposed development the local planning authority is required to achieve a balance between economic, social and environmental considerations.”*

Based on the EPUK document, as above, consideration should be given to the wider benefits from the opening of the Development.

The document also includes criteria and thresholds for air quality assessments. This element of the guidance is discussed further in Chapter 3.

2.4 Local Planning Policy

2.4.1 Bridgend Local Development Plan 2006 - 2021 (Adopted 18th September 2013)

The Bridgend Local Development Plan provides guidance for development in the region up until 2021. In terms of air quality the most pertinent policy in relation to the development is policy ENV7 which states:

“Development proposals will only be permitted where it can be demonstrated that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to health, biodiversity and/or local amenity due to:

- 1) **Air pollution** (Waterman's emphasis);
- 2) *Noise pollution;*
- 3) *Light pollution;*
- 4) *Contamination (including invasive species);*
- 5) *Land instability;*
- 6) *Water (including groundwater) pollution;*
- 7) *Any other identified risk to public health or safety.*

Development in areas currently subject to the above will need to demonstrate mitigation measures to reduce the risk of harm to public health, biodiversity and/or local amenity to an acceptable level."

3. Assessment Methodology and Significance

3.1 Assessment Methodology

This qualitative air quality report has been undertaken using information from a variety of sources and has included:

- A review of BCBC's latest Air Quality Progress document in order to identify baseline conditions in the area;
- A review of the local area to identify potentially sensitive receptor locations that could be affected by changes in air quality that may result from the proposed Development;
- Consideration of potential activities that would take place during construction, the potential effects of these activities on local air quality and the environmental management controls to be employed to control them.
- Consideration of the likely air quality impact of the operational development including a review of the traffic flow data, as derived from the Transport Assessment (TA) undertaken by Asbri Transport Ltd, and a qualitative assessment of the emissions from the development plant and odour emissions from the Fast Food Restaurant and Family Pub.

3.1.1 Construction

The major influences on air quality throughout the construction works are likely to be dust-generating activities and vehicle emissions, from plant and vehicles both on and around the Site. The emphasis of the construction phase would be to minimise the potential effects at source, through appropriate site management and control practices, including controls on vehicles movements.

Potentially, nuisance can be caused by the deposition of construction dust. Construction derived dust effects cannot be easily quantified and therefore a more qualitative approach has been employed to predict potential effects from these works. The emphasis of this approach lies in the minimisation of potential dust effects at source through appropriate environmental management controls relating to, at least, 'good practice' site management practices. In particular, this included:

- Identification of good working practices and suitable mitigation measures in order to minimise the potential for dust emissions, and nuisance risk; and
- The likely generation of construction vehicle movements.

The proximity of sensitive receptors and their orientation in relation to the prevailing wind, in addition to the scale and duration of demolition and construction activities, would have a bearing on potential nuisance effects.

The assessment of the likely effects from construction of the proposed Development has been based on:

- A review of likely activities to be undertaken on the Site; and
- A review of the sensitive uses in the area immediately surrounding the Site in relation to their distance and orientation.

The significance of effect has been concluded through professional judgement based on the following:

- The baseline air quality conditions in the area surrounding the Site;
- The mitigation measures that would be proposed; and
- The knowledge of how such mitigation measures are routinely and successfully applied throughout the UK.

In addition to the above, the classification system provided in Table 2 was adopted, again based on professional judgement, for the assessment of potential adverse air quality effects arising from dust generated by the developments construction.

Table 2: Dust Impacts Significance Criteria

Effect Significance	Definition
Major adverse	Receptor is less than 10m from a major active construction or demolition site.
Moderate adverse	Receptor is within 100m of a major active construction or demolition site.
Minor adverse	Receptor is between 100m and 200m from a major active construction or demolition site or up to 100m from a minor active construction site, demolition site or construction site.
Negligible	Receptor is over 100m from any minor construction site or over 200m from any major construction site.

3.1.2 Completed Development

Relatively sizeable changes in traffic are required to bring about significant changes in air quality. Guidance from the Environmental Protection UK (EPUK) 'Development Control: Planning for Air Quality' suggests that the decision as to whether or not an air quality assessment is required should take into account:

- *"The physical characteristics and scale of the proposals;*
- *The changes in traffic flows predicted to arise;*
- *The proposals for Combined Heat and Power (CHP) plant or standalone boilers burning biomass; and*
- *The air quality sensitivity of the area (a highly sensitive area would be one where concentrations are above or close to the objectives, if the objectives are well below the objectives then the area would be of a lower sensitivity)."*

In addition to the above, the following criteria is provided to help establish when an air quality assessment is likely to be considered necessary:

- *"Proposals that will generate or increase traffic congestions, where 'congestion' manifests itself as an increase in periods with stop start driving;*
- *Proposals that will give rise to a significant change in either traffic volumes, typically a change in AADT or peak traffic flows of greater than $\pm 5\%$ or $\pm 10\%$, depending on local circumstances, or in vehicle speed (typically of more than $\pm 10\text{kph}$), or both, usually on a road with more than 10,000 AADT (5,000 if narrow and congested);*
- *Proposals that would significantly alter the traffic composition on local roads, for instance, increase the number of HDVs by say 200 movements or more per day;*
- *Proposals that include significant new car parking, which may be taken to be more than 100 spaces outside an AQMA or 50 spaces inside an AQMA. Account should also be taken of car park turnover, i.e. the difference between short-term and long-term parking;*
- *Developments which may significantly affect nitrogen deposition to sensitive habitats;*
- *Introduction of new exposure close to existing sources of air pollutants, including road traffic, industrial operations, agricultural operations etc...;*
- *Proposals that include biomass boilers or biomass-fuelled CHP plant;*
- *Proposals that could give rise to potentially significant impacts during construction for nearby sensitive*

locations; and

- *Large, long-term construction sites that would generate large HGV flows (>200 movements per day) over a period of a year or more.”*

In order to assess the effect of the proposed development on local air quality, Asbri Transport Ltd provided 24 hour AADT traffic flows which were derived from the TA also undertaken by Asbri Transport Ltd. The data included baseline traffic data for the opening year “without” the proposed Development and for the opening year “with” the proposed development.

4. Baseline Conditions

4.1 Bridgend County Borough Council, Air Quality Review and Assessment

4.1.1 2013 Air Quality Progress Report for Bridgend County Borough Council

BCBC's 2013 Air Quality Progress Report provides a review of the air quality within the county. The report includes the following statement in its conclusion:

“Based on the new air quality monitoring data and information gathered on new and proposed developments since the Updated Screening Assessment Report produced by Bridgend County Borough Council in 2013, there are, no indications that there is any significant breach of the air quality objectives prescribed in the Air Quality (Wales) Regulations 2000 and the Air Quality (Amendment) (Wales) Regulations 2002.”

It is therefore noted that there are no significant air quality issues within the county and the development site is not located within or adjacent to an AQMA.

4.2 Local Monitoring

BCBC has a number of monitoring locations within the county including some data within Maesteg. Table 3 summarises the diffusion tube data for Maesteg which has been extracted from BCBC's 2013 Air Quality Progress Report. A map showing the locations of these monitoring sites has also been extracted from BCBC's Air Quality Progress Report and included as Appendix A.

Table 3: BCBC's Diffusion Tube Monitoring Results for 2012 (Maesteg Town Centre)

Diffusion Tube Reference	Diffusion Tube Location	NO ₂ concentration (Bias adjusted and annualised value at monitoring location)
DT25-OBC-079	Commercial Street, Maesteg	31
DT26-OBC-080	Commercial Street, Maesteg	37
DT27-OBC-081	Talbot Street, Maesteg	27
DT28-OBC-082	Castle Street, Maesteg	40
DT29-OBC-083	Castle Street, Maesteg	28
DT23-OBC-084	Castle Street, Maesteg	36
DT24-OBC-094	Castle Street, Maesteg	33
DT25-OBC-095	Castle Street, Maesteg	26

It can be seen that, with the exception of site DT28-OBC-082, all of the NO₂ concentrations are below the relevant UK AQS objectives shown in Table 1. Whilst the data at site DT28-OBC-082 does show that the AQS threshold is met this represents an isolated case when compared with the other monitoring sites. Thus, for this reason, and the fact that the threshold has not been significantly exceeded, it was confirmed by BCBC in their 2013 Air Quality Progress Report that an AQMA would not need to be introduced in Maesteg at this time.

4.3 Pollutant Background Concentrations

Background concentrations (i.e. concentrations not including local pollutant sources such as roads or stacks) of NO_x, NO₂, PM₁₀ and PM_{2.5} are available from the Defra Air Quality Archive for 1x1km grid squares for assessment years between 2010 and 2030. Table 4 presents the Defra forecast background concentrations for the year 2013 for the grid square the Site is located within (285500, 190500).

Table 4: Defra Urban Background Maps in 2013 for the Grid Square at the Location of the Site

Pollutant	Concentration (µg/m ³)
NO _x	15.9
NO ₂	11.8
PM ₁₀	12.7
PM _{2.5}	8.6

Table 4 shows that in 2013 the pollutant background concentrations are significantly below the relevant UK AQS objectives shown in Table 1.

5. Potential Effects

5.1 Construction

Given the size of Development, it is considered to be a major construction site.

The construction works in relation to the Development are likely to affect local air quality conditions, as follows:

- Dust generated from construction activities;
- Emissions from construction plant e.g. piling rigs, compressors, excavators, concrete mixers and generators; and
- Emissions from vehicles (e.g. lorries, cars and vans) associated with the construction of the Development, import of building materials and removal of waste materials, accessing and leaving the Site on the local road network.

5.1.1 Nuisance Dust

The National Air Quality Objectives seek to address the health implications of fine particulate matter, which comes largely from combustion sources such as motor vehicle engines. In the case of particles released from ground excavation works, demolition and construction, the majority of these would tend to be larger particles, which generally settle out close to the works and may cause annoyance due to their soiling capability. In this respect, there are no formal standards or criteria for adverse effects caused by deposited particulate matter.

Dust from construction activities within the urban environment generally does not arise at distances beyond approximately 200m from the works (in the absence of mitigation), and the majority of any deposition that might give rise to significant soiling tends to occur within 50 to 100m. Receptors that are downwind of a construction site are at more risk of dust effects than those that are upwind. The occupiers of residential properties tend to be more sensitive to dust than occupiers of commercial properties.

The area surrounding the Site is predominantly urban. To the north of the site there is a builders merchants which would be less susceptible to the effects of dust, however, approximately 30m north of the site are the gardens of residential properties, which based on the distance criteria in Table 2, would be within the range likely to experience **moderate adverse** and **temporary** dust impact. Residential gardens are also located 10m from the southern and eastern boundary of the site and 40m from the western, all of which are likely to experience a **moderate adverse** and **temporary** dust impact based on the distance criteria in Table 2. To the northeast of the site is an abattoir, the main building of which is located 60m from the development site and is therefore likely to experience a **moderate adverse** and **temporary** dust impact.

All other receptors are likely to experience **negligible** effects from construction.

5.1.2 Vehicle Emissions

Plant operating on the Site and construction vehicles entering and leaving the Site would have the potential to contribute to local levels of air pollution, particularly NO₂ and PM₁₀.

It is anticipated that the effect of construction vehicles entering and leaving the Site would be **negligible** in the context of local background pollutant concentrations and existing local road traffic emissions.

Any emissions from plant operating on the Site would be small in comparison to the emissions from the road traffic movements on the roads adjacent to the Site and therefore would be **negligible**. In addition,

the proposed mitigation measures (described in chapter 6) would further reduce any effect.

5.2 Qualitative Assessment of Completed Development

As detailed in Section 3: Assessment Methodology and Significance, EPUK provides guidance as to when a quantitative air quality assessment may be required. The sections below are taken from the criteria listed in EPUK Guidance and provide the reasons why a quantitative air quality assessment is not required to accompany the planning application for the proposed Development.

It is also noted that BCBC have confirmed, given that the site is located in an area where there are no significant air quality issues that have been identified by BCBC, a formal quantitative assessment of the air quality impact of the sites traffic would not be required in this case.

5.2.1 Qualitative Assessment of Operational Generated Traffic

Vehicles driving into and exiting the Site, including those accessing all onsite facilities within the proposed Development, have the potential to affect air quality along surrounding roads where sensitive uses exist. A summary of the 24 hour Annual Average Daily Traffic 'without' and 'with' the proposed Development in the opening year of 2015 is presented in Table 5.

Table 5: 24hr AADT Traffic Data

Road Link	Opening Year without Development (2015)	Development Flows	Opening Year with Development (2015)	Impact
Llynfi Road	3435	-46	3389	-1%
Talbot Street	5037	-808	4230	-16%
Commercial Street	6127	-625	5502	-10%
Neath Road	4709	128	4837	3%
Commercial Street	6621	-589	6032	-9%
Bridge Street	4243	64	4307	2%
Stryd Bethania	9109	-716	8393	-8%
Stryd Bethania (N)	9257	-789	8468	-9%
Ewenny Road	1007	-256	751	-25%
Stryd Bethania (S)	8565	-662	7903	-8%
Stryd Bethania	8583	-712	7871	-8%
Oakwood Drive	1020	1282	2302	126%
Llwydarth Road	8920	1145	10065	13%
Maesteg Road (N)	8712	1282	9994	15%
Mill Street	4709	-50	4659	-1%

Road Link	Opening Year without Development (2015)	Development Flows	Opening Year with Development (2015)	Impact
Maesteg Road (S)	13237	1182	14419	9%
Maesteg Road (N)	13177	1059	14236	8%
Heol Neuadd Domos	1279	-9	1270	-1%
Maesteg Road (S)	12341	1049	13391	9%
Maesteg Road (S)	13099	1214	14312	9%
Lidl	1579	-14	1565	-1%
Maesteg Road (N)	12992	1200	14192	9%
Maesteg Road (W)	13006	1163	14170	9%
Bryn Road	6709	-160	6549	-2%
Maesteg Road (E)	12965	1022	13987	8%
Bridgend Road	3167	-5	3163	0%

Source: Data provided by Asbri Transport

As detailed in Section 3: Assessment Methodology and Significance, EPUK Guidance considers a significant change where there is a change in traffic by $\pm 5\%$ or $\pm 10\%$ on a road with AADT flows of 10,000 or more (5,000 if narrow and congested).

It can be seen from the traffic data presented in Table 5 that, as a result of the development, the majority of links show a change in flow of less than +10%. Furthermore, where the increase is shown to be greater than 10% this is shown to be on roads with traffic flows of less than 10,000 vehicles in the opening year. It is also worth noting that there is a significant reduction in traffic on some of the roads to the north of the site, particularly those routes approaching Maesteg Town Centre where BCBC's monitoring sites are located. Thus, the impact from the developments traffic is forecast to be **negligible**.

The concentration of parking is dispersed across the site. Furthermore, the site is not located within or near to an AQMA and on this basis the air quality impact should be **negligible**.

It is also noted that the development is not forecast to generate significant numbers of HDV movements and on this basis the impact from HDV movements is forecast to be **negligible**.

5.2.2 Qualitative Assessment of Emissions from Heat and Power

EPUK Guidance recommends that consideration should be given to the impacts of centralised boilers or

CHP plants. It is noted that, as this is an outline planning application, details regarding the specification and installation of the heat and power plant are not available at this time. It is noted however that this plant would be in line with requirements of current Building Regulations.

The site is also not located within or adjacent to an existing AQMA. Consequently, it is considered that no unacceptable effects on air quality at local existing and future receptors would occur as a result of this plant. Therefore, the effect on local air quality associated with the operation of the completed Development's proposed plant is considered to be **negligible**.

5.2.3 Qualitative Assessment of Odour Impact

It is considered that, for the most part, there is sufficient distance between the location of proposed and existing residential units and the proposed family pub / restaurant and fast food restaurants to allow sufficient dispersion of odour from the kitchens of the food serving uses. Notwithstanding this point, without mitigation, there could be a **moderate adverse** impact without mitigation for those dwellings located in close proximity to these uses.

6. Mitigation Measures

6.1 Construction

A range of environmental management controls will be developed with reference to the Building Research Establishment guidance 'Controlling Particles, Vapour and Noise from Construction Sites' published in 2003. These will be detailed in an Environmental Management Plan (EMP) with the objective to prevent the release of dust entering the atmosphere and/or being deposited on nearby receptors. Such measures, which will be adopted and secured through planning obligations and/or appropriate planning conditions, will include:

- Routine dust monitoring at sensitive residential locations, particularly those close to the construction site boundary, with the results and effectiveness of controls reviewed at regular meetings;
- Damping down surfaces during dry weather;
- Erection of appropriate hoarding and/or fencing to reduce dust dispersion and restrict public access;
- Sheeting of buildings, chutes, skips and vehicles removing demolition wastes;
- Building elevations which front public boundaries or are immediately adjacent to adjoining properties will be fully scaffolded and completely enclosed by sheeting to provide a dust and safety shield during the demolition process;
- Appropriate handling and storage of materials, especially stockpiled materials;
- Restriction of drop heights onto lorries and other equipment;
- Use of 'deconstruction' demolition techniques, where appropriate;
- Use of a wheel wash, limiting of vehicle speeds to 5 mph, avoidance of unnecessary idling of engines and routing of Site traffic as far from residential and commercial properties as possible;
- Fitting all equipment (e.g. for cutting, grinding, crushing) with dust control measures such as water sprays wherever possible;
- Use of gas powered generators rather than diesel if possible (these are also quieter) and ensuring that all plant and vehicles are well maintained so that exhaust emissions do not breach statutory emission limits;
- No fires will be allowed on the construction site; and
- Ensuring that a road sweeper is available to clean mud and other debris from hardstanding roads and footpaths.

Specific attention will be made to any demolition and construction activities that will inevitably take place close to the boundaries of the construction site and thus in close proximity to existing sensitive properties.

Such measures are routinely and successfully applied to construction projects throughout the UK, and are proven to reduce significantly the potential adverse nuisance dust impacts associated with the various stages of demolition and construction work.

Following the employment of appropriate environmental management controls as described above, the effects of the demolition and construction works upon local air quality will be significantly reduced. As such, the worst-case (anticipated during dry and windy conditions only) residual effects resulting from demolition and construction related dust will be **temporary, short to medium** term and of **negligible to minor adverse** significance at receptors located 10m to 100m from the Site boundary.

6.2 Completed Development

6.2.1 Operational Generated Traffic

As detailed in Section 5 (Potential Effects), the air quality impact of the developments traffic is forecast to be **negligible** and as such no mitigation measures are required. Nonetheless, it is noted that Travel Plan is proposed by the Transport Assessment which would further reduce impact as this will include measures that will encourage a shift away from the private car to more sustainable forms of transport.

6.2.2 Emissions from Heat and Power

As detailed in Section 5 (Potential Effects), the air quality impact of the developments Heat and Power plant is forecast to be **negligible** and as such no mitigation measures are required. Notwithstanding this point the specification of the plant will be made available prior to development construction.

6.2.3 Odour Mitigation

Guidance regarding odour mitigation is provided in the Defra document 'Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems'. This document identifies the following objective which is relevant for development sites such as this:

“for new premises or premises covered by planning conditions restricting the impact of odour the system shall be designed to prevent harm to the amenity.”

As this is an outline planning application details regarding the discharge stack and odour mitigation measures are not available at this time. Notwithstanding this point, in order to accord with the above objective, any facilities will be designed based on the following principles:

- Stack heights will be sufficient to allow adequate dilution of odour
- Consideration will be given to the positioning of the stack so that it is located as far as possible from the nearest existing and proposed residential accommodation.
- A stack discharging into a semi-enclosed area such as a courtyard or the area between back additions will be avoided where possible.
- The prevailing wind direction will also be considered in the ducting positioning.

The detail of any further odour mitigation measures will be identified prior to the developments construction, however, it is likely that the above measures will reduce the odour impact on the worst effected properties to that of a **negligible** level.

7. Summary and Conclusions

The construction of the proposed Development has the potential to affect local air quality in terms of on-site plant and vehicle emissions and dust.

A qualitative assessment of the effects from construction works has been carried out. Due to the distance of the nearest sensitive receptors to the Site, it is considered that dust from the Site, and emissions from plant operating on the Site, would have at worst a **moderate adverse** effect at surrounding sensitive properties. With the implementation of a range of appropriate site management practices to control dust emissions, the worst-case (anticipated during dry and windy conditions only) residual effects resulting from demolition and construction related dust will be **temporary, short to medium** term and of **negligible to minor adverse** significance at receptors located 10m to 100m from the Site boundary.

The effect of construction vehicles entering and leaving the Site would be **negligible** in the context of local background pollutant concentrations and existing local road traffic emissions.

The completed Development would not result in significant changes in HDV movements or total vehicle movements. In addition, parking provision has been dispersed across the site. The heating plant will also be in accordance with current Building Regulations. It is also noted that the site is not located within or adjacent to an existing AQMA. Therefore, based on EPUK Guidance, the air quality effects of the completed Development would also **negligible**.

Odour from the proposed food serving premises may have **moderate adverse** impact on the closest properties to these uses. Consideration will therefore be given to the design and positioning of stacks so that this impact is reduced to **negligible** levels.

APPENDICES

A. Location of BCBC's NO₂ Monitoring Sites (Maesteg Town Centre)

Services

- Buildings Services
- Civil Engineering
- Energy & Environmental
- Future360
- Secondment & Outsourcing
- Structural Engineering
- Transport Planning

Sectors

- Aviation
- Commercial
- Communication & Technology
- Conservation / Historic
- Education
- Energy
- Government & Defence
- Healthcare
- Highways
- Hotels
- Industrial
- Marine
- Rail
- Residential
- Retail
- Sports & Leisure
- Transportation
- Urban Regeneration
- Waste
- Water

United Kingdom

- Belfast
- Birmingham
- Brentwood
- Bristol
- Cardiff
- Derby
- Edinburgh
- Glasgow
- Inverness
- Leeds
- Lingfield
- London
- Manchester
- Nottingham
- Perth
- Sheffield

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