

HOYLAND WEST – PLOT 1

AIR QUALITY MITIGATION REPORT

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VANGUARDIA
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1. INTRODUCTION

- 1.1. Vanguardia has been commissioned by Winvic Construction Ltd to undertake an Air Quality Mitigation Report (AQMR) in order to discharge condition no.30 (air quality) as part of a reserved matters planning application for planning permission 2020/0647, for a *"Hybrid planning application for a development up to 103,086sqm of employment uses (use classes B1/B2 and B8) and associated works including access roads, drainage and landscaping."*
- 1.2. Condition no.30 states:
- "On commencement of the development of any plot, detailed specifications of agreed air quality mitigation measures shall be submitted to and approved in writing by the Local Planning Authority. The development shall be thereafter be undertaken in accordance with the approved details Reason: In the interests of minimising the impact of the proposal on air quality in accordance with Local Plan Policy Poll 1."*
- 1.3. The Air Quality Impact Assessment (AQIA)¹ in support of the consented scheme (Planning Reference: 2020/0647) predicted the air quality impacts of the proposed development on sensitive receptors within the surrounding area. The conclusion of that assessment was that the residual impacts on the surrounding area are categorised as slight (adverse) to moderate (beneficial) (based upon EPUK & IAQM (2017)² guidance) and the resulting effects would not be significant.
- 1.4. As part of the original of consented scheme an Air Quality Damage Calculation was undertaken, which concluded that the central total impacts (for the scheme as a whole) on the local air quality would be £686,363. This monetary value should be put towards air quality mitigation measures, and not seen as a financial contribution to the local authority.
- 1.5. This AQMR sets out the mitigation measures associated with Plot no.1 of the consented scheme and the associated costings of the proposed mitigation measures have been considered against the previous AQIA, which have been taken away from the total damage calculation within that document.

¹ Vanguardia, 2020. Hoyland West - Air Quality Assessment

² Environmental Protection UK and Institute of Air Quality Management, 2017. *Land-Use Planning & Development Control: Planning For Air Quality*

- 1.6. It should be noted that the monetary figure is not for the whole of Plot no. 1; the remaining monetary figure should be put to mitigation for Plot 2 and 3.

2. POLICY CONTEXT

NATIONAL PLANNING POLICY FRAMEWORK

2.1. A revised National Planning Policy Framework was published in July 2018 and updated in February 2019. The NPPF (2019)³ sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced.

2.2. Paragraph 103 states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

2.3. Paragraph 181 states:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

NATIONAL PLANNING POLICY GUIDANCE

³ Department of Communities and Local Government (2019). National Planning Policy Framework. HMSO, London.

2.4. The NPPF is supported by Planning Practice Guidance (PPG) (DCLG, 2019)⁴, which includes guiding principles on how planning can take account of the impacts of new development on air quality.

2.5. Paragraph 008 Reference ID: 32-008-20191101 of the NPPG states:

"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met.

Examples of mitigation include:

- *maintaining adequate separation distances between sources of air pollution and receptors;*
- *using green infrastructure, in particular trees, where this can create a barrier or maintain separation between sources of pollution and receptors;*
- *appropriate means of filtration and ventilation;*
- *including infrastructure to promote modes of transport with a low impact on air quality (such as electric vehicle charging points);*
- *controlling dust and emissions from construction, operation and demolition; and*
- *contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development."*

LOCAL POLICIES

2.6. The Barnsley Local Plan⁵ was adopted on the 3rd January 2019 and at the time of writing is the current policy framework to aid in deciding planning applications.

⁴ Department for Communities and Local Government (2019). National Planning Policy Guidance. HMSO, <http://planningguidance.planningportal.gov.uk/>

⁵ Barnsley Metropolitan Borough Council, 2019. Local Plan.

2.7. Policy T5 Reducing the Impact of Road Travel states:

- *"Developing and implementing robust, evidence-based air quality action plans to improve air quality;*
- *Working with our sub regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions; and*
- *Implementing measures to ensure the current road system is used efficiently."*

2.8. Policy Poll1 Pollution Control and Protection states:

"Development will be expected to demonstrate that it is not likely to result, directly or indirectly, in an increase in air, surface water and groundwater, noise, smell, dust, vibration, light or other pollution which would unacceptably affect or cause a nuisance to the natural and built environment or to people.

We will not allow development of new housing or other environmentally sensitive development where existing air pollution, noise, smell, dust, vibration, light or other pollution levels are unacceptable and there is no reasonable prospect that these can be mitigated against.

Developers will be expected to minimise the effects of any possible pollution and provide mitigation measures where appropriate."

2.9. Policy AQ1 Development in Air Quality Management Areas states:

"Development which impacts on areas sensitive to air pollution in air quality management areas will be expected to demonstrate that it will not have a harmful effect on the health or living conditions of any future users of the development in terms of air quality (including residents, employees, visitors and customers), taking into account any suitable and proportionate mitigation required for the development.

We will only allow residential development which impacts on areas sensitive to air pollution, where the developer provides an assessment that shows living conditions will be acceptable for future residents, subject to any required mitigation.

We will only allow development which impacts on areas sensitive to air pollution which could cause more air pollution, where the developer provides an assessment that shows there will not be a significantly harmful effect on air quality, subject to any required mitigation.

Furthermore, development which impacts on areas sensitive to air pollution due to traffic emissions will be expected to demonstrate suitable and proportionate mitigation relative to the increased traffic emissions generated by the development.”

NATIONAL AIR QUALITY ACTION PLAN

- 2.10. Defra has produced an Air Quality Plan⁶ to tackle roadside nitrogen dioxide (NO₂), throughout the United Kingdom. Along with a package of infrastructure, initiatives and grants, the plan requires local authorities to produce local action plans by March 2018, with the aim of reducing the air quality concentrations below the objective as soon as practically possible, should they be predicting exceedances of the air quality objectives beyond 2020.

NATIONAL CLEAN AIR STRATEGY

- 2.11. The Clean Air Strategy (CAS)⁷ was published in January 2019 and sets out how the government will improve air quality nationally. The document aims to tackle the issue of air quality across all parts of government and society to protect public health and the environment, and identifies what needs to be done to achieve this. The document complements the Industrial Strategy (archived), the Clean Growth Strategy⁸ and the 25 Year Environment Plan⁹ and is a key part of delivering the government’s 25 Year Environmental Plan.
- 2.12. The document has adopted international targets to reduce emissions of fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide and non-methane volatile organic compounds by 2020 and 2030. The document proposes tougher goals to cut public exposure to particulate matter pollution, as recommended by the World Health Organisation.
- 2.13. The strategy not only targets the reduction of emissions, but also a reduction in exposure.

REDUCING EMISSIONS FROM ROAD TRANSPORT: ROAD TO ZERO STRATEGY

⁶ Department for Environment Food & Rural Affairs & Department for Transport, 2017. UK plan for tackling roadside nitrogen dioxide concentrations.

⁷ Department for Environment, Food and Rural Affairs, 2019. Clean Air Strategy 2019.

⁸ Department for Business, Energy and Industrial Strategy, 2017. The Clean Growth Strategy.

⁹ Department for Environment, Food and Rural Affairs, 2018. A Green Future: Our 25 Year Plan to Improve the Environment.

- 2.14. The Reducing emissions from road transport: Road to Zero Strategy¹⁰ (2018) document produced by the Office for Low Emission Vehicles (OLEV), Office for Zero Emission Vehicles (OZEV) and the Department for Transport (DfT) sets out how the government aims to end the sale of new conventional petrol and diesel cars and vans by 2040, with almost every car and van having zero emissions by 2050. Furthermore, the aim of the government is to see at least 50%, and as many as 70%, of new car sales being ultra-low emission by 2030 (and up to 40% of new van sales).
- 2.15. A number of measures have been set out in the document which outline how the government will support this gradual transition, some of which are consumer incentives, research and development and innovation support based.
- 2.16. Since this document was released, the Prime Minister has announced that, as part of the Ten Point Plan for a Green Industrial Revolution (2020)¹¹, the government will end the sale of new petrol and diesel cars and vans from 2030, 10 years earlier than set out in the document above.
- 2.17. This ambitious plan will see road traffic-related NO_x emissions to reduce significantly over the coming decades, likely beyond the scale of reductions forecast in air quality tools used to assess air quality impacts.

¹⁰ Department for Transport, Office for Low Emission vehicles and Office for Zero Emission Vehicles, 2018. Reducing emissions from road transport: Road to Zero Strategy

¹¹ Department for Transport and Office for Zero Emission Vehicles, 2020. The Ten Point Plan for a Green Industrial Revolution

3. MITIGATION APPROACH

ASSESSMENT CRITERIA

APPROACH

- 3.1. The approach undertaken within this assessment is based upon previous experience of undertaking similar assessment for other schemes.
- 3.2. The results of the air quality assessment demonstrated that the air quality concentrations at the site and surrounding area are not anticipated to be at a level that would adversely impact sensitive receptors and would fall within the NO₂ annual mean objective (40 µg/m³).
- 3.3. It was therefore concluded that the consented development was anticipated to have a moderate (beneficial) to slight (adverse) impact. Any mitigation measures to aid in reducing impacts should be proportionate to the impact of the scheme. This is highlighted in the EPUK & IAQM (2017) guidance, which reiterates the PPG, stating:
- 3.4. *"Mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact."*
- 3.5. Although in this case mitigation was not necessary, when following the Barnsley Metropolitan Borough Council (BMBC) Air Quality and Emissions Good Practice Planning Guidance¹² document, it was deemed that mitigation was required for the whole consented development, and should be to the monetary sum of £686,363 (in line with the approved Air Quality Damage Calculation).

METHODOLOGY

- 3.6. Vanguardia have based the calculation on the example calculation set out in the Air Quality Planning Guidance document in Appendix 3, which refers to the Defra (2021) *Air Quality Appraisal: Damage Cost Guidance*¹³. In summary, the method involved the following:

¹² Barnsley Metropolitan Borough Council., 2020. *Air Quality and Emissions Good Practice Planning Guidance*.

¹³ Department of Environment, Food & Rural Affairs. Air quality appraisal: damage cost guidance. Accessible at: <https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance>

- The relevant emissions of pollutants from the scheme (tonnes per year) were quantified, in this case NO_x and PM₁₀ emissions associated with traffic generated by the development; and
- In order to reflect the assumption that willingness to pay for health will rise in line with economic growth; a further uplift of 2% pa was applied from the current year of known costs (2017), through to 2029, to encompass the first full year of full occupation.

3.7. Finally, these adjusted damage cost factors were applied to the scheme emissions to give the annual damage cost of the scheme for the five-year period from the first fully occupational year (assumed to be 2029) for the whole site.

4. MITIGATION MEASURES

OPERATIONAL MITIGATION

- 4.1. It should be noted that any mitigation measures should be proportionate to the consented development and the overall impact that the consented development will have upon future air quality concentrations.
- 4.2. The associated air quality assessment concluded that the air quality impacts associated with the proposed development would range from moderate (beneficial) to slight (adverse), but not significant, with no exceedances of the objectives having been predicted. In line with the BMBC Air Quality Planning Guidance document, the impacts should be to consider the impacts against the central damage cost value of £686,363.
- 4.3. The local guidance recommends for Commercial / Retail / Industrial sites that 10% of parking spaces to be provided with Electric Vehicle charge points, and should be Mode 3 (AC, 7 to 22 kW) at a minimum.
- 4.4. A review of the proposals for Phase One indicates the following will be provided:
- 34 electric charging points;
 - Ducting for 130 future electric charging points;
 - 60 cycle spaces; and
 - Travel Plan, as detailed in the original Air Quality Assessment.
- 4.5. Detailed research has been undertaken of the potential costs associated with the electric charging points and cycle spaces.
- 4.6. The predicted mitigation costings are set out in Table 1. To note, the type of electric charging points and cycle stands are indicative examples and are not the final specifications to be installed.

Table 1 Mitigation Costs

Mitigation Measure	Cost	Total
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Based upon a fast Electric Charging Point	£3,000 ¹⁴ (per unit)	£492,000 (based upon 164 spaces)
Cycle Spaces	£581.18 ¹⁵ (per unit – 5 spaces)	£6,974.16
Estimated Costs		£498,974.16

4.7. The potential costings in Table 1 have been compared to the central damage cost (£686,363) in Table 2.

Table 2 Mitigation Costs vs Damage Calculation

Damage Central Cost	Estimated Mitigation Costs	Difference
£686,363	£495,487.08	-£187,388.84

4.8. The comparison of the indicative mitigation costs against the predicted central air quality damage costs, set out in Table 2, demonstrate that the mitigation measures do not exceed the central air quality damage calculation cost. However, the damage cost is considered to be for the whole of the project, therefore the remaining cost will be covered by mitigation for Plot 2 and Plot 3 of the consented development.

4.9. To note, the calculated costs do not cover the costs associated with the travel plan, or highway infrastructure improvements which would aid in improving traffic flow and potential air quality emission impacts

¹⁴ Energy Saving Trust. Guide to Chargepoint infrastructure for business users. Accessible at:

https://energysavingtrust.org.uk/sites/default/files/reports/6390%20EST%20A4%20Chargepoints%20guide_v10b.pdf

¹⁵ Barriers Direct. Bike Stands. Accessible at : <https://www.barriersdirect.co.uk/secure-bike-parking-c1017/bike-stands-c1196/sheffield-cycle-toastrack-galv-colour-4-to-16-bikes->

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5. CONCLUSIONS

- 5.1. The results of the air quality impact assessment, submitted as part of the consented application for this development predicted that the residual air quality impacts associated with the operational phase of the development on the surrounding area, are categorised as moderate (beneficial) to slight (adverse). The resulting effects of the development would be considered to be *"not significant"* and on that basis, no additional mitigation was recommended or considered necessary or proportionate.
- 5.2. However, an air quality damage calculation was submitted as part of the consented development, as set out in line with the BMBC Air Quality Planning Guidance.
- 5.3. The Damage Cost calculation gives an approximate monetary valuation based solely on the emissions of pollutants from the scheme and involves the application of published average damage cost factors (£ per tonne emitted).
- 5.4. in line with the supplementary planning guidance, the level of air quality impact (as a monetary figure) is used to determine the level of mitigation required, with the total cost adding up to the central damage cost value of £686,363.
- 5.5. The mitigation measures set out in Section 4 are anticipated to be of an order which would cost less than the monetary value outcome of the damage cost value. However, the remaining costs are anticipated to be covered by the mitigation measures proposed for Plot 2 and 3 of the development.
- 5.6. It is therefore considered that by using the damage cost calculation, along with the mitigation measures which have been put in place that *"minimising the impact of the proposal on air quality in accordance with Local Plan Policy Poll 1."* Therefore, planning condition no.30 can be discharged.

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