Technical note:
Bishopsgate Goodsyard – Response to Clarifications Provided

1. Introduction

On the 16 December 2015, Amec Foster Wheeler Environment & Infrastructure UK Ltd (Amec) were asked to review the air quality chapter of the Environmental Statement produced in support of the proposed Bishopsgate Goodyards development (GLA Application Number D&P 1200c). The review concluded that, on the basis of the chapter reviewed, "It will be difficult to conclude whether the planned development will have a significant impact or not on air quality as there are fundamental issues with the approach to the whole assessment". A list of the issues identified was provided on the 18 December 2015. The consultant (Aecom) acting on behalf of the applicant has provided clarifications in response to these comments, which are considered in Section 2.

In January 2016, it was ascertained that an amended Environmental Statement had been produced in support of the development, which addresses some of the issues raised initially by Amec. This amended chapter was reviewed by Amec on 5 January 2016. This response to the clarifications provided by Aecom is therefore produced in the light of the review carried out by Amec in January 2016.

2. Response to clarifications

ENERGY CENTER

1. The London Mayor's SPG on Sustainable Design and Construction requires ultra-low NOx boilers in all new developments and sets emissions standards for all new CHP and biomass plant (Greater London Authority – Air Quality Neutral Policy). There is no discussion whether the development is air quality neutral or not. A discussion on Boiler/ CHP plant emission standards is also missing in the report however it is a requirement for any development in London to comply with the mandatory emission standards;

Aecom state that the Air Quality Neutral Assessment is provided in Appendix N2 of the Environmental Statement. It was concluded that the proposed Scheme will meet the air quality neutral requirements. This appendix was considered in the Amec review of January 2016.

The Amec review of January 2016 concluded that the development is air quality neutral for transport emissions, but building emissions are considered to be marginally above the benchmark, but within the margins of error of the calculation. As boilers and CHP meet Band B emission standards, it was accepted that the development can be considered to be neutral in terms of air quality. However, the benchmark emissions used require clarification as Tables 5 and 6 in Appendix N provide different emission benchmarks.

2. Only one year of meteorological data is used for the energy centre assessment rather than five years used as a standard for such assessment;

Aecom state that additional years of meteorological data are considered unlikely to change the overall significance of air quality effects from this source of pollutants as contributions are less than 0.2 µg m^{-3} with the year considered (2012). The same conclusion was drawn in the Amec review of January 2016.

3. The worst case scenario for the energy centre concentration prediction is not provided, it seems that a seasonal and diurnal profile emissions have been modelled while in table 12-10 it is stated that no emission profile was used in ADMS-5;

Aecom state that In Table 12-10 it was incorrectly referenced that no diurnal profile was used. A seasonal and a diurnal profile were used in the modelling, as set out in the text. It is accepted that use of an operational profile provides a realistic worst-case scenario.

ROAD TRAFFIC ASSESSMENT

4. A three months of 2013 NO_2 monitoring campaign is used to annualise monitoring NO_2 data to year 2012;

5. For the traffic modelling verification, three months of NO2 diffusion tube monitoring is used, however a minimum of 6 months is required in the LAQM.TG(09) to be able to extrapolate an annual mean;

Aecom correctly reference LAQM.TG(09) which states that a minimum period of three months monitoring should always be used, as has been carried out for this project.

6. The 2013 existing baseline scenario is calculated using the 2013 "three months" NO_2 monitoring annualised to year 2012, with 2012 meteorological data, 2012 traffic emissions and 2012 background Defra concentration. It is not clear why 2013 data are not used instead;

Aecom state that "*the original assessment was undertaken in 2013, and as such a full set of data for 2013 for local continuous monitoring units was not available, so the diffusion tube monitoring data could not be factored to a 2013 annual mean equivalent. It was therefore factored to 2012. Traffic data, meteorological data and emission factors were used to match the monitoring data. It was decided to maintain consistency with the original data when the assessment was revised, and in addition this provides a worst-case assessment*." This argument is accepted.

7. Three model bias adjustment factors are calculated depending on zones selected by the applicant. However, it is not clear which adjustment factor is used for each of the modelled receptors;

Aecom have provided clarification of which adjustment factors are used for which receptors.

8. Prediction of exposure of new residents to level of NO_2 above the AQO for some of the proposed receptors modelled. It is recommended that the applicant provides mitigation measures to be put in place to reduce this exposure, particularly in the light of the legal opinion recently offered by Robert McCracken QC (http://cleanair.london/wp-content/uploads/CAL-322-Robert-McCracken-QC-opinion-for-CAL_Air-Quality-Directive-and-Planning_Signed-061015.pdf).

Aecom state that mitigation measures have been incorporated in to the design of the Proposed Development through the selection of less sensitive uses in Building A and for lower floors in Building F. It was recognised in the Amec review of January 2016 that no exceedance is predicted where residential use is proposed. However, as stated in the Amec review of January 2016, the energy centre is predicted to contribute 8.0 µg m^{-3} of NO_2 to a total concentration just below the Air Quality Objective (AQO) (39.6 µg m^{-3}) at receptor PC1_4_30 located at Plot C 30th Floor. The assessment suggests that this is a result of the emissions from Combined Heat and Power (CHP) flue exhausted on the roof of Plot F. In view of the uncertainties around modelling, and the possibility of exceedances in the AQO at this location, and similar locations, it is recommended that pollutant concentrations at elevated locations within the development are considered further, with a view to specifying any mitigation requirements to reduce exposure within these properties if it is considered possible that the NO_2 annual or short-term mean AQOs might be exceeded at these locations.

GUIDANCE

9. The assessment uses the 2010 EPUK guidance which has now been replaced by the 2015 EPUK/IAQM guidance, it is recommended that the impact assessment is carried out referring to the EPUK/IAQM 2015 guidance;

Aecom have applied the new significance criteria to the modelled results and concluded that:

"*While some of the receptor impact descriptors are Moderate Adverse, the changes in concentration are very small (maximum of 0.5 µg m^{-3}). In practice, changes in concentration of this magnitude are likely to be very difficult to distinguish through any post operational monitoring regime due to the number of sources of NO_2 in an urban environment and the inter annual effects of varying meteorological conditions. Therefore, in the overall evaluation of significance the potential for significant air quality impacts within this band will be considered in this context, and the impacts are therefore considered to be not significant*."

The Amec review of January 2016 recognised that if the results had been considered using the updated 2015 EPUK/IAQM guidance on significance, moderate adverse impacts may have been identified at some receptors. As the overall significance of effect of a development is based on the quantitative description of impacts and professional judgement, it can reasonably be concludes that overall impacts on pollutant concentrations at existing receptors are not significant. However, as moderate adverse impacts are predicted at six out of 28 modelled receptors, it could also have been concluded that impacts were significant.

However, as stated in the Amec review of January 2016, these impacts are associated with changes in AADT flows of up to around 500 predicted on roads around the development (as shown on Bethnal Green Road in Appendix N). The level of traffic impact shown in Appendix N of the air quality assessment is surprising as the design of the development does include measures that will minimise the impact on local air quality. Car parking provision will be minimal. It is intended for the office and retail uses to be car free and that for the residential use, it is proposed to provide a maximum of 51 spaces at basement level.

Further clarification on the level of traffic impact would be useful as the Transport Statement produced in support of the development indicates that the peak hour two-way car trip generation is only 20 movements, suggesting that the 24-hour impact on any road would be a lot less than 500. If the change in traffic flow is lower, it is unlikely that moderate adverse impacts would be identified.

10. For construction traffic, the maximum number of HGV movements per day for the Proposed Development is estimated to be 51. It is currently assessed against the EPUK (2010) criteria of 200 HGV rather than EPUK/IAQM 2015 criteria of +/- 25 AADT change in HDV flows in an AQMA. With reference to the EPUK/IAQM 2015 criteria, a more detail assessment of traffic impact of HGV during construction phase might be required.

Aecom have clarified the reasoning behind the use of the 200 HGV per day screening criteria. This argument is accepted.

3. Conclusions

The clarifications provided by Aecom address the comments made by Amec in December 2016. The Amec review of the amended Environmental Statement chapter carried out in January 2016 did raise further issues that would benefit from further clarification:

- It is accepted that the development can be considered to be neutral in terms of air quality. However, the benchmark emissions used require clarification as Tables 5 and 6 in Appendix N provide different emission benchmarks. If the values in Table 5 are the correct values, the actual predicted emissions are considerably higher than the benchmark and the development cannot be considered to be air quality neutral;
- It is recognised that no exceedance of the AQOs is predicted where residential use is proposed, however, the modelling results indicate that there is a possibility of exceedances in the AQOs at elevated locations within the proposed development (concentrations only marginally below the annual mean NO_2 AQO of 40µg m^{-3} are predicted) as a result of emissions from the proposed CHP. It is recommended that pollutant concentrations at elevated locations within the development are considered further, with a view to specifying any mitigation requirements to reduce exposure within these properties if it is considered possible that the NO_2 annual or short-term mean AQOs might be exceeded at these locations; and
- As moderate adverse impacts are predicted at six out of 28 modelled receptors as a result of the traffic impact of the development, it could have been concluded that impacts were significant. This level of traffic impact is surprising as car parking provision will be minimal. It is intended for the office and retail uses to be car free and that for the residential use, it is

proposed to provide a maximum of 51 spaces at basement level. Further clarification on the likely level of traffic impact would be useful, particularly as the Transport Statement produced in support of the development indicates that the peak hour two-way car trip generation is only 20 movements.

Author	Reviewer
Ben Warren	Christelle Escoffier

Copyright and non-disclosure notice

Third party disclaimer

Management systems

This document has been produced by Amec Foster Wheeler Environment & Infrastructure UK Limited in full compliance with the management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.