

**Subject** 1 Triton Square Life Science Responses  
**Job No/Ref** 297393-00  
**Date** 03 June 2024

## 1. 1 Triton Square Life Science

Arup has reviewed the following:

- RSK 445796-01 Triton Square Air Quality Lab Emissions Review

Responses to comments can be found in Table 1.

**Table 1: Comments and responses**

Comment	Response
<p>The overall scope (baseline review of the existing formaldehyde and benzene concentrations, an assessment of the potential changes in air quality arising from the operation of the laboratory extract discharges and determination of the emission rates which will keep process contribution at less than 10% of the relevant air quality standard, long-term and short-term EALs) is accepted, though the derivation and justification for the criteria is not clear, for example in comparison with the Environment Agency’s Process Contribution screening criterion in relation to risk assessment for Environmental Permits of 10% of short-term or 1% of long-term environmental standards.</p>	<p>The 10% limit has been selected to provide a robust limit which avoids risks of exceeding relevant EALs. The aim will be for all stacks to have total emissions of less than 10% of the EAL. This provides a significant headroom to allow for uncertainty in the assessment.</p>
<p>The air quality policies, guidance, legislation, and standards referred to are considered appropriate, though some of those described may not be necessarily specifically relevant to laboratory emissions.</p>	<p>Noted.</p>
<p>The assessment of baseline conditions is considered appropriate, although the information used is not listed in the Methodology Section 4.1. The ‘pilot study’ which is the source of the formaldehyde baseline estimate appears to be rather old and is not referenced and no baseline concentrations are presented for benzene.</p>	<p>The formaldehyde pilot study is from 2000; however this is the only study available and has been included to give understanding of ambient formaldehyde concentrations, which should now be significantly lower.</p> <p>No baseline information for benzene is available as benzene is not currently measured by any of the UK’s air quality networks, as stated in the report (section 5.1).</p>
<p>At the time of preparing the assessment, the substances used in the laboratory and therefore pollutants likely to be emitted from the laboratory extract discharges are unknown,</p>	<p>The assessment has considered commonly used solvents in laboratories, benzene and formaldehyde. These solvents can become airborne and directly lead to, or contribute to, adverse impacts on health and the</p>

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<p>therefore, the assessment has considered two solvents: benzene and formaldehyde. No discussion of likely emissions or justification for the selection of these pollutants is presented, and is a key limitation of this assessment.</p>	<p>environment, by reacting with other air pollutants outdoors in the presence of sunlight to produce tropospheric ozone. The assessment has considered both solvents when determining the maximum allowable emission of substances to the air from the strobic fans in connection with the proposed laboratory use.</p> <p>Appendix B provides the maximum allowable emission rates for additional pollutants defined by the Environment Agency. This comprehensive list provides the controlled emission rates for all pollutants with a relevant EAL.</p>
<p>The model selected (ADMS 6) is considered appropriate.</p>	<p>Noted.</p>
<p>No justification of the significance criteria used in the assessment is presented. Environment Agency EAL are used, but it is not clear that the laboratory will be regulated by the Environment Agency therefore these may not be directly relevant and the report does not appear to consider other sources of criteria, for example The Air Quality Standards Regulations 2010 limit value for benzene is not referenced (though it is equivalent to the EAL).</p>	<p>The Environment Agency EALs are the most stringent and extensive and have therefore been used in the assessment. The EA list sets out a greater range of pollutants than the Air Quality Standards Regulation, therefore the EA EALs have been used in the assessment.</p>
<p>The modelled domain and selection of receptors are considered appropriate. The sensitive human receptors closest to the Proposed Development have been considered in the assessment. It is noted that as the flues are at height, a variety of heights were modelled on the façade of each receptor building to ensure the highest impact was captured. The assessor is asked to clarify how different height for different receptors was selected in Table 4 of the assessment.</p>	<p>It is assumed that a storey is 3m. Heights have been selected as ground floor, middle floor and top floor.</p>
<p>The London city meteorological data has been used in the assessment which is considered appropriate.</p>	<p>Noted.</p>
<p>The buildings relevant to the assessment and can have a significant effect on the dispersion of</p>	<p>Noted.</p>

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pollutants have been included in the assessment and therefore considered appropriate.	
The Applicant is asked to clarify whether any potential sources of odour will be introduced at Site and whether mitigation is proposed to address this.	No significant sources of odour are proposed to be introduced on site and have therefore not been included in the assessment.
The 'background' pollutant concentrations used are not included in the modelling parameters table, so it is not clear what was assumed for benzene.	No backgrounds have been used in the assessment, as discussed in the report. The results show process contribution.
The dispersion model was run with emissions of 1g/s per strobic fan to determine the annual mean, and maximum daily and 30-minute mean process contributions across the study area. The maximum predicted process contributions of pollutants for the relevant averaging periods have been used to calculate the emission rates required to achieve 10% of relevant EALs. For each scenario, the short-term (Daily and 30 minute-mean) and long-term (annual mean) impacts were compared to the EALs. The emission factor from the averaging period with the highest process contribution, and therefore worst air quality impacts was used to calculate the results. This methodology is considered acceptable.	Noted
The stated exit velocity of 32m/s seems quite high. We would ask the assessor to confirm that this is correct.	<p>An exit velocity of 32m/s was provided in the information pack by the project team.</p> <p>It is confirmed that the exit velocity of the fume extract fan is 32m/s. The design has adopted Strobic Fans with high discharge velocity to bring the stack height down</p>
The assessor is asked to clarify whether any nearby committed or consented schemes include sources of similar or other chemical emissions which could cumulatively affect air quality have been considered within the dispersion modelling assessment.	Cumulative effects have not been considered within the dispersion modelling assessment. The application of the 10% control limit provides a suitably robust reduction to account for any uncertainty or potential cumulative effects.
The assessor is asked to clarify if any mitigation measures are proposed within the proposed development.	No additional mitigation for laboratory emissions has been identified as being required.

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