Air Quality Neutral Assessment

Lockcorp House, 75 Norcutt Road, TW2 6SR

For Leek Real Estate (No.1) Limited

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Quality Management

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1 Introduction

1.1 This supplementary Air Quality Neutral report quantifies the emissions of atmospheric pollutants from the development at source (i.e. from vehicles and building plant) and compares the emissions with official benchmark levels that define neutrality. This report complements RPS' air quality impact *'Air Quality Assessment: Lockcorp House, 75 Norcutt Road, TW2 6SR'* report. That air quality assessment report considered the impacts of the development on ambient air quality at the point of exposure (i.e. at sensitive receptor locations) by comparing predicted levels with Air Quality Strategy objectives and EU Limit Values.

1.2 The requirement for this Air Quality Neutral report is driven by:

- Policy 7.14 in the London Plan [1], entitled 'Improving Air Quality', which states that development proposals should *"… be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas (AQMAs))";* and
- The Mayor's Air Quality Strategy (MAQS) [2], which states that *"New developments in London shall as a minimum be 'air quality' neutral through the adoption of best practice in the management and mitigation of emissions."*

1.3 The 'air quality neutral' policy is designed to address the problem of multiple new developments that individually add only a small increment to pollution at the point of human exposure (i.e. to ambient concentrations), but cumulatively lead to baseline pollution levels creeping up. The policy requires developers to design their schemes so that they are at least Air Quality Neutral in terms of emissions at source.

1.4 The Greater London Authority (GLA) Sustainable Design and Construction Supplementary Planning Guidance (SPG), published in April 2014, provides a formal definition for the term 'air quality neutral' and allows a transparent and consistent approach to demonstrating whether a development is 'air quality neutral'. This Air Quality Neutral report determines whether the proposed development is air quality neutral using the GLA SPG calculation method that separately quantifies building emissions (from heating and power plant) and transport emissions.

2 Methodology - Air Quality Neutral Calculation

Building Emissions

2.1 The SPG requires a comparison of the 'Total Development Building Emissions' with the 'Total Building Emissions Benchmark' (Total BEB).

2.2 The proposals do not make provision for an energy centre and there is no centralised on-site source of emissions to air associated with the provision of heat and power.

2.3 As such, building emissions have not been considered further.

Transport Emissions

2.4 The SPG requires a comparison of the 'Total Development Transport Emissions' with the 'Total Transport Emissions Benchmark' (Total TEB).

2.5 For each land-use class, the number of vehicle movements generated by the operation of the development has been provided by the project's transport consultants. The average trip length (km) for each land-use class could not be provided; however, consistent with the examples provided in the Air Quality Neutral Planning Support Update [3], the average London distances driven per annum for the different development categories have been obtained. The number of vehicle movements has been multiplied by the average distances driven for each land use class to derive the vehicle.km term. The total vehicle.km for the development has then been multiplied by the NO_X and PM_{10} emission factors (in kg/annum) provided in the SPG to determine the 'Total Development Transport Emissions'.

2.6 The SPG provides TEB factors for NO_X and PM_{10} as mass emissions per dwelling per annum for residential properties and mass emissions per floor space per annum for all other land- use classes. A separate TEB for each pollutant (NO_X and PM_{10}) has been calculated for each land-use class. A 'Total TEB' has been calculated as the total of the individual TEBs for each land-use class and for each pollutant.

2.7 For each pollutant, the 'Total Development Transport Emissions' have been compared with the 'Total TEB'. Where the 'Total Development Transport Emissions' exceeds the 'Total TEB', the need for on or off-site mitigation has been identified.

3 Results of Air Quality Neutral Calculation

Transport Emissions

3.1 Table 3.1 and Table 3.2 set out the annual mass of NO_X and PM_{10} emitted by the proposed development per annum, respectively.

Table 3.1: NOx - Total Development Transport Emissions (kgNOx/annum)

Land Use Class	Development trip rate (vehicle/day)	Average Trip Length (km)	Vehicle.km/ annum	Development Emissions ($kgNO_x$/annum)
Residential dwellings	19	11.4	75,059	28

Emissions factor for outer London = 0.353 g/vehicle.km

Table 3.2: PM_{10} - Total Development Transport Emissions ($kgPM_{10}$/annum)

Land Use Class	Development trip rate (vehicle/day)	Average Trip Length (km)	Vehicle.km/ annum	Development Emissions ($kgPM_{10}$/annum)
Residential dwellings	19	11.4	75,059	5

Emissions factor for outer London = 0.0606 g/vehicle.km

3.2 Table 3.3 and Table 3.4 set out the benchmark mass emissions of NO_X and PM_{10} against which the transport emissions from the development have been compared.

Table 3.3: NO_X - Total Transport Emissions Benchmark ($kgNO_x$/annum)

Land Use Class	Gross Floor Area (m^2)	Number of Dwellings	NOx TEB (g/dwelling/annum)	Transport Emissions Benchmark (kgNOx/annum)
Residential dwellings	1,239	15	1553	23

Table 3.4: PM_{10} - Total Transport Emissions Benchmark ($kgPM_{10}$/annum)

Land Use Class	Gross Floor Area (m^2)	Number of Dwellings	PM_{10} TEB (g/dwelling/annum)	Transport Emissions Benchmark ($kgPM_{10}$/annum)
Residential dwellings	1,239	15	267	4

3.3 Table 3.5 provides a comparison of the development transport emissions with the benchmark.

Table 3.5: Summary of Transport Results

	Total Development Transport Emissions	Total Transport Emissions Benchmark	Difference: Total Development – Transport Emissions Benchmark
NO_X (kg/annum)	28	23	5
PM_{10} (kg/annum)	5	4	1

3.4 For NO_X, the Total Development Transport Emissions exceed the Total Benchmarked Transport Emissions by 5 $kgNO_X$/annum. For PM_{10}, the Total Development Transport Emissions exceed the Total Benchmarked Transport Emissions by 1 $kgPM_{10}$/annum.

3.5 However, the benchmarks need to be viewed in the context of the development specific changes: when the vehicle movements generated by the proposed development are compared with the site's existing use, the daily number of light goods vehicles (LGVs) is expected to increase by 2 and the number of ordinary goods vehicles (OGVs) is expected to decrease by 8. As the emissions from an OGV are more than the emissions from an LGV, the development is likely to lead to an overall reduction in emissions. Based on that, no mitigation is considered proportionate.

4 Conclusions

4.1 The total transport emissions exceed the relevant benchmarks during the operational phase of the proposed development. However, the emissions associated with the proposed use are likely to be lower than emissions associated with the site's existing use. Based on that, no mitigation is considered necessary.

Glossary

AQMA	Air Quality Management Area
BEB	Building Emissions Benchmark
CHP	Combined Heat and Power
GLA	Greater London Authority
Impact	The change in atmospheric pollutant concentration and/or dust deposition. A scheme can have an 'impact' on atmospheric pollutant concentration but no effect, for instance if there are no receptors to experience the impact.
LBRT	London Borough of Richmond upon Thames
MAQS	Mayor's Air Quality Strategy
SPG	Supplementary Planning Guidance
TEB	Transport Emissions Benchmark

References

1 GLA, March 2015, The London Plan – Spatial Development Strategy for London Consolidated with Alterations since 2011.

2 GLA, December 2010, The Mayor's Air Quality Strategy.

3 AQC, April 2014, Air Quality Neutral Planning Support Update: GLA 80371

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