

Appendix 8.1 London Benchmarks

Supplementary Planning Guidance (SPG) on ‘Sustainable Design and Construction’ contains a wide variety of measures for protecting and improving air quality in London.

For air pollution, the Mayor’s Priorities are stated as:

- Developers are to design their schemes so that they are at least ‘air quality neutral’;
- Developments should be designed to minimise the generation of air pollution;
- Developments should be designed to minimise and mitigate against increased exposure to poor air quality;
- Developers should select plant that meets the standards for emissions from combined heat and power and biomass plants set out in Appendix 7 (of the document); and
- Developers and contractors should follow the guidance set out in the SPG on ‘The control of dust and emissions during construction and demolition’ when constructing their development (Greater London Authority, 2014b).

The SPG on ‘Sustainable Design and Construction’ requires that air quality assessments are prepared for major developments where the development:

- is located within an AQMA;
- is likely to result in a new air pollution exceedance;
- is located within 150 m of a sensitive receptor (schools, hospitals, care homes, nurseries, residential development);
- will bring sensitive receptors into an area of poor air quality;
- includes biomass boilers and/or combined heat and power; and
- involves waste management/treatment activities, mineral extraction or any other general industrial combustion process.

For major developments that meet the above criteria, an air quality assessment is required to be submitted with the planning application and include:

- a review of air quality around the development site using existing air quality monitoring and/or modelling data;
- air quality dispersion modelling data carried out in accordance with the London Councils Air Quality and Planning Guidance;
- an indication of the number of people (receptors) which will be exposed to poor air quality as a result of the development, and show their location on a map;
- an assessment of the impact on air quality during the construction phase and detailed mitigation methods for controlling dust and pollution emissions in line with the adopted SPG on ‘The control of dust and emissions from construction and demolition’;

- an outline and justification of mitigation measures associated with the design, location and operation of the development in order to reduce air pollution and exposure to poor air quality; and
- a maintenance regime for any combustion equipment or mitigation measures.

The SPG on 'Sustainable Design and Construction' provides guidance on:

- Minimising air quality emissions from location, transport, construction and demolition, and design and occupation;
- Protecting internal air quality;
- What is meant by 'air quality neutral';
- Emissions standards for combustion plant; and
- Offsetting provisions.

'Air quality neutral' applies across London as a whole and emission benchmarks have been proposed in terms of buildings' operation and transport emissions in order to meet this criterion. It is understood that the benchmark should be capable of being met without the need for significant additional mitigation. The emission benchmarks are summarised in **Appendix 8.1.2, below**.

Where individual and/or communal gas fired boilers are installed in commercial and domestic buildings they should achieve a NO_x rating of less than 40mgNO_x/kWh. If the particular combustion equipment is not known at the time of the planning application, developers are required to provide a written statement of their commitment and ability to meet the emissions standards within their Air Quality Assessments. Emissions standards are provided for solid biomass boilers and CHP plants (see **Appendix 8.2**).

Where developments do not meet the air quality neutral benchmarks, it is suggested that appropriate on-site mitigation measures will be required to off-set any excess in emissions. Measures could include:

- Green planting/walls and screens;
- Upgrade or abatement work to combustion plant;
- Retro-fitting abatement technology for vehicles and flues; and
- Exposure reduction.

In addition, as part of the Implementation Framework for the London Plan, a SPG on 'The control of dust and emissions during construction and demolition' was published in July 2014 (Greater London Authority, 2014b).

This SPG requires an 'Air Quality and Dust Risk Assessment' to be submitted at the time of a planning application; with an Air Quality and Dust Management Plan submitted prior to the commencement of works.

It also provides guidance for:

- The preparation of an 'Air Quality and Dust Risk Assessment' for construction and demolition activities, including air quality (dust) risk assessments;
- The stages of development the 'Air Quality and Dust Risk Assessment' is to cover include demolition, earthwork, construction stages and trackout (vehicles leaving the site);

- The identification of the potential scale (large, medium, small) of dust emissions for each stage of work;
- The identification of the level of risk due to the scale of dust emissions on soiling (dirt), health and the natural environment, depending on the duration of the activities, their intensity, the prevailing meteorological conditions, the existing levels of background pollution and the sensitivity of receptors to dust;
- Best practice methods for controlling dust and pollution control on-site and to prevent trackout;
- Recommendations for monitoring low, medium and/or high risk sites; and
- Early notification of new 2015 and 2020 standards for non-road mobile machinery.

Air Quality Neutral Emissions Benchmarks for Buildings

The following table provides the Building Emissions Benchmarks based on the gross floor area for each type of development class.

Table 8.1.1: 'Air Quality Neutral' Emissions Benchmarks for Buildings (BEBs)

Land Use Class	NO _x (g/m ² /annum)	PM ₁₀ (g/m ² /annum)
Class A1	22.6	1.29
Class A3 – A5	75.2	4.32
Class A2 and Class B1	30.8	1.77
Class B2 – B7	36.6	2.95
Class B8	23.6	1.90
Class C1	70.9	4.07
Class C2	68.5	5.97
Class C3	26.2	2.28
D1 (a)	43.0	2.47
D1 (b)	75.0	4.30
Class D1 (c - h)	31.0	1.78
Class D2 (a - d)	90.3	5.18
Class D2 (e)	284	16.3

The gross floor area (GFA) is used to define the area.

Air Quality Neutral Emissions Benchmarks for Transport

The following table provides the Transport Emissions Benchmarks based on the gross floor area and the location of the development.

Table 8.1.2: 'Air Quality Neutral' Emissions Benchmarks for Transport (TEBs)

Land Use	CAZ	Inner	Outer
NO_x (g/m²/annum)			
Retail (A1)	169	219	249
Office (B1)	1.27	11.4	68.5
NO_x (g/dwelling/annum)			
Residential (C3)	234	558	1553
PM₁₀ (g/m²/annum)			
Retail (A1)	29.3	39.3	42.9
Office (B1)	0.22	2.05	11.8
PM₁₀ (g/dwelling/annum)			
Residential (C3,C4)	40.7	100	267