



# Technical Guidance on Air Quality

**August 2017**

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# 1 Introduction

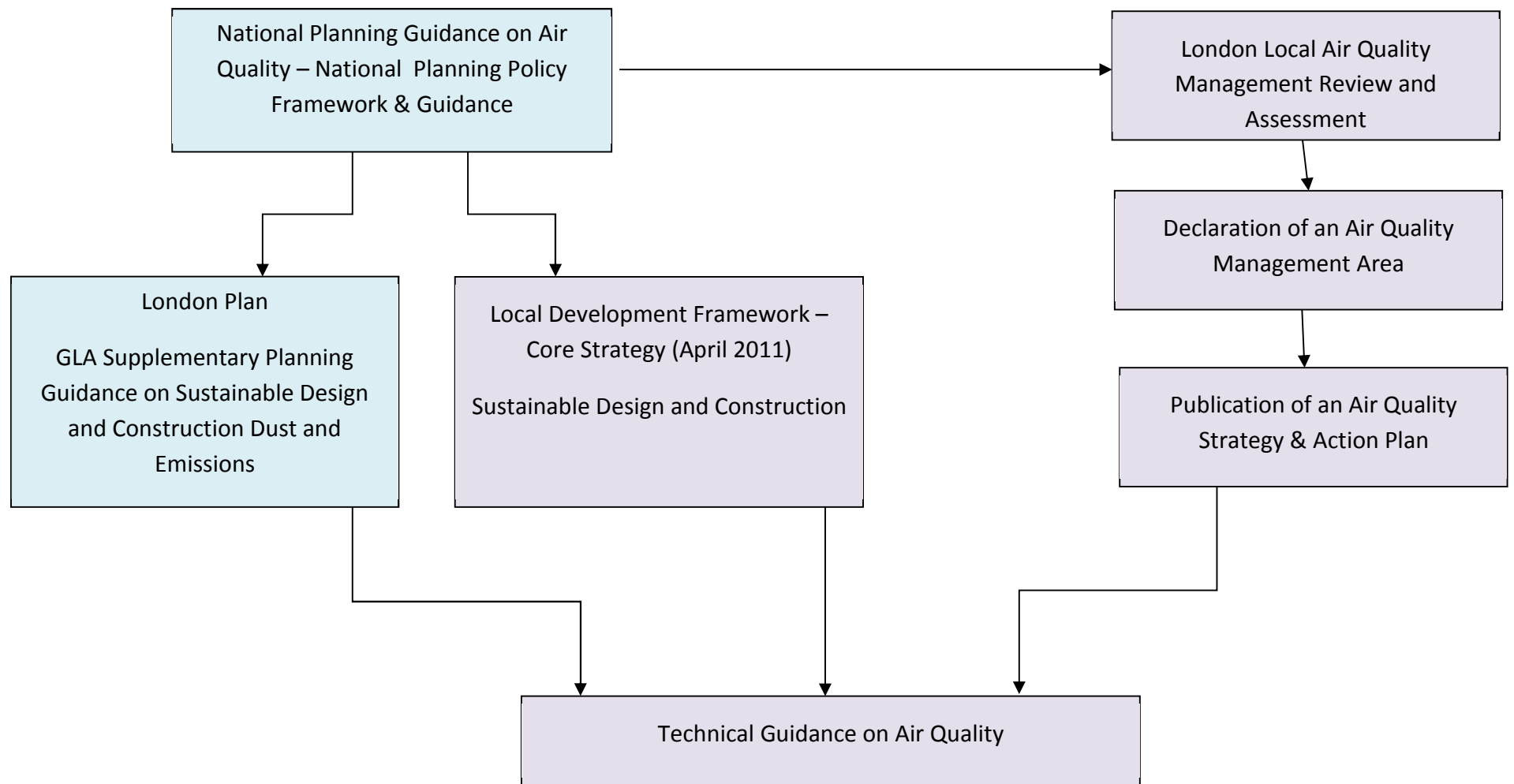
This Air Quality Technical Guidance (AQTG) sets out the Council's requirements for reducing air pollution from all developments and planning applications within the Borough.

Southwark's Core Strategy and the Saved Southwark Plan, together with the London Plan, constitute the current Development Plan for the borough, and they are considered when assessing and determining planning applications.

The objectives of the AQTG are:

- To ensure consistency in the approach when dealing with air quality in a planning context in Southwark
- To highlight the existing policy framework in London and Southwark, and emphasise the importance of air quality as a material planning consideration
- To identify the circumstances where detailed air quality assessments and/or low emission strategies will be required
- To provide guidance on measures that can be implemented to mitigate any potentially harmful impacts due to new development on air quality in Southwark
- To provide guidance on the use of planning conditions and Section 106 obligations to improve air quality, and
- To provide guidance on the requirements of air quality assessments and outline the circumstances under which these will be required (see Appendix B).

The relationship of the AQTG to national, regional and local policy and guidance and to the Southwark Air Quality Strategy & Action Plan (AQS&AP) are shown in Figure 1.



**Figure 1 - The AQTG's relationship to national, regional and local policy & guidance, and the Southwark Air Quality Strategy & Action Plan**

## 2 Background

### 2.1 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) sets out air quality objectives and policy options to improve air quality in the UK. All local authorities are required assess and review air quality on a regular basis under the Local Air Quality Management (LAQM) regime. Targets are set for seven pollutants and all local authorities are obliged to work towards meeting them. These are equal to the statutory air quality objective values imposed under the Air Quality Regulations for England, Scotland, Wales and Northern Ireland. The seven pollutants that local authorities are required to report on are:

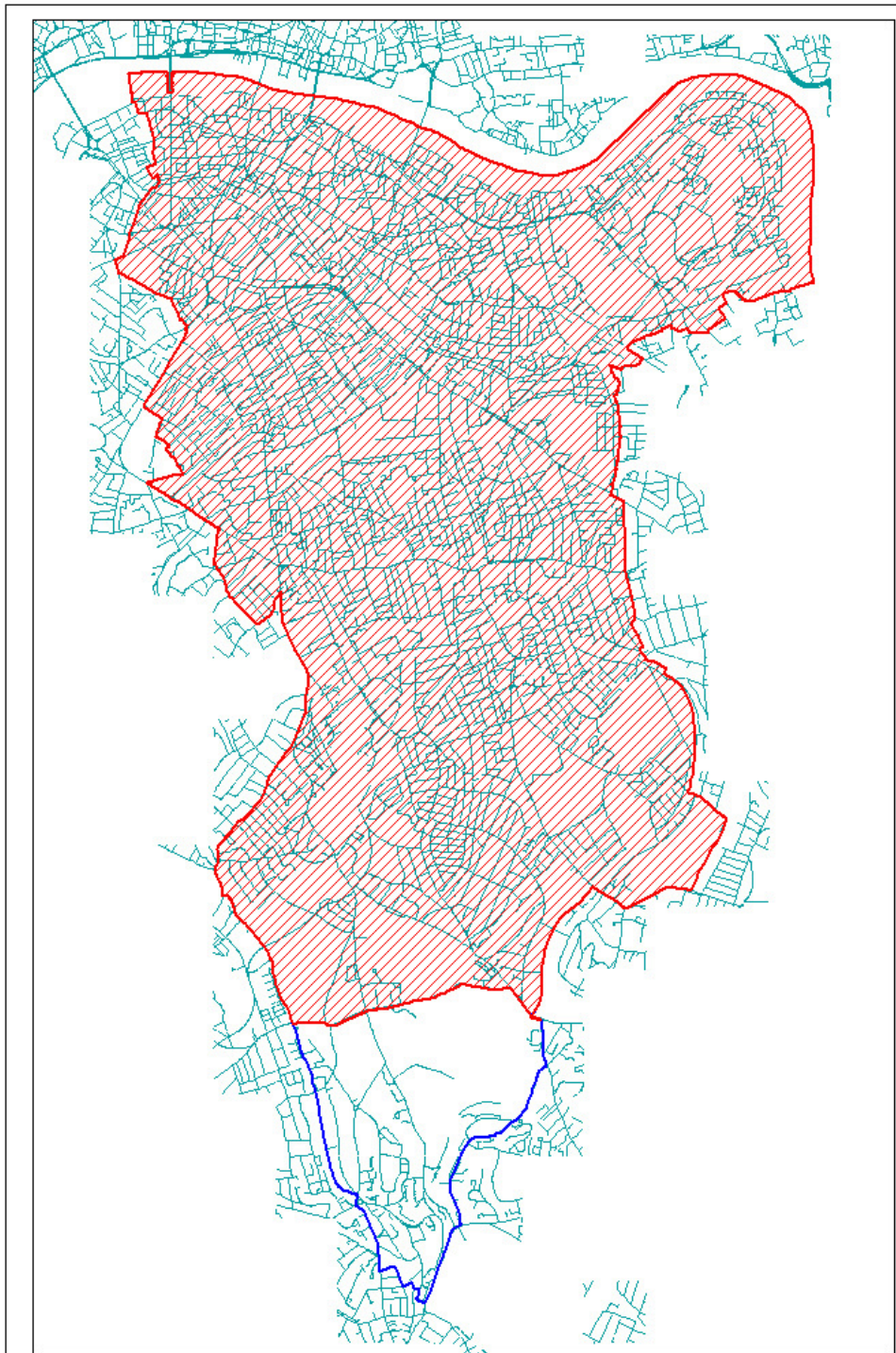
- Nitrogen Dioxide (NO<sub>2</sub>)
- Particulates (PM<sub>10</sub> & PM<sub>2.5</sub>)
- Carbon Monoxide (CO)
- Sulphur Dioxide (SO<sub>2</sub>)
- Benzene (C<sub>6</sub>H<sub>6</sub>)
- 1,3-Butadiene (C<sub>4</sub>H<sub>6</sub>) and
- Lead (Pb)

### 2.2 London Local Air Quality Management Framework (LLAQM)

The UK Government (Defra) and the Greater London Authority (GLA) require London local authorities to report on the pollutants of greatest concern to the health of Londoners. These are: NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and SO<sub>2</sub>. Southwark's LLAQM statutory reports can be found at <http://www.southwark.gov.uk/air-quality/strategies-plans-and-reports>

### 2.3 Air Quality in Southwark

The majority of the London Borough of Southwark has been designated an Air Quality Management Area (AQMA) for exceedences of Nitrogen Dioxide. A map of Southwark's AQMA can be found at Map 1. The main sources of air pollution are vehicle emissions and emissions from buildings. See Figure 2 and Table 1 for the source apportionment, i.e. the sources of atmospheric pollution, in Southwark. The Southwark Air Quality Strategy & Action Plan (AQS&AP) sets out the measures that will be taken to reduce emissions to work towards achieving the legal air quality standards and objectives. The current AQS&AP can be found at the following link:- [http://www.southwark.gov.uk/assets/attach/1003/AQIS\\_29\\_May\\_12.pdf](http://www.southwark.gov.uk/assets/attach/1003/AQIS_29_May_12.pdf)



**London Borough of Southwark Air Quality Management Area 2003**

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**Map 1 - Southwark Air Quality Management Area**

## Southwark - Source Apportionment of NO<sub>x</sub> Emissions (%) - 2013

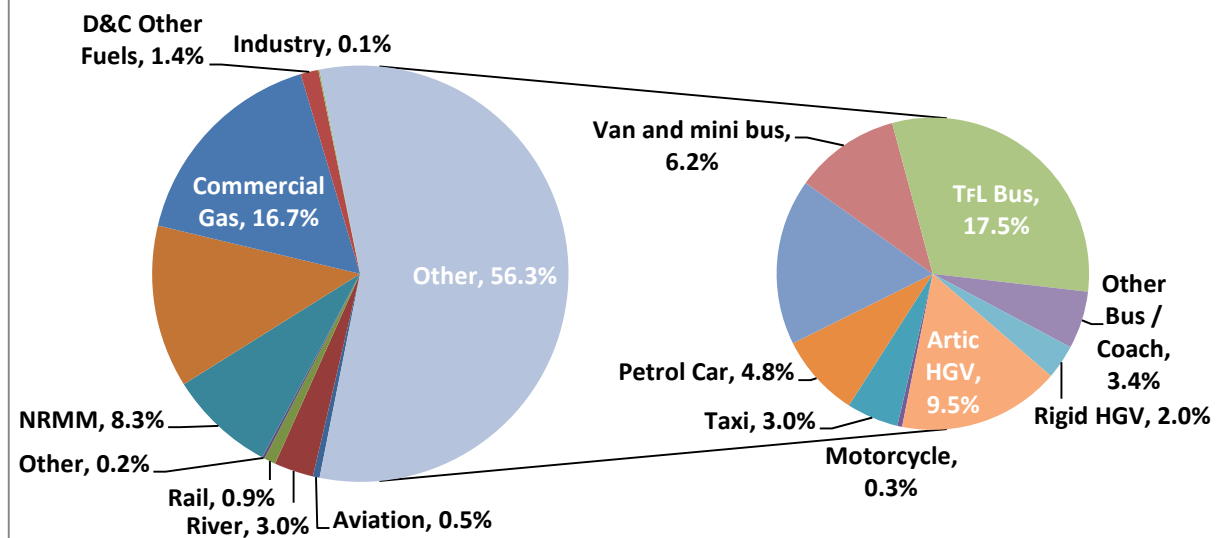


Figure 2 – Oxides of Nitrogen Emissions in the London Borough of Southwark

| Source Type       | NO <sub>x</sub> Emissions (tonnes/year) - 2013 |
|-------------------|--|
| Aviation          | 6.25   |
| River             | 36.49  |
| Rail              | 10.89  |
| Other             | 2.25   |
| NRMM              | 99.51  |
| Domestic Gas      | 151.39   |
| Commercial Gas    | 199.94   |
| D&C Other Fuels   | 16.58  |
| Industry          | 1.18   |
| Resuspension      | 0.00   |
| Motorcycle        | 3.35   |
| Taxi              | 36.50  |
| Petrol Car        | 58.14  |
| Diesel Car        | 116.36   |
| Van and mini bus  | 73.82  |
| TfL Bus           | 209.62   |
| Other Bus / Coach | 40.32  |
| Rigid HGV         | 23.89  |
| Artic HGV         | 113.45   |
| <b>Total</b>      | <b>1199.93</b>                                 |

Table 1 - Southwark NO<sub>x</sub> Emissions in tonnes



# 3 Air Quality Policy Context

## 3.1 National Planning Policy

The National Planning Policy Framework (NPPF) March 2012 states:

“124 Planning policies should sustain compliance with and contribute towards EU Limit Values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan.”

The Government has published a [National Planning Practice Guidance for Air Quality](#) to assist all professions in assessing whether air quality is relevant to a planning decision.

## 3.2 Greater London Planning Policy

The Mayor of London’s key priorities for air quality, as set out in the Mayor’s Air Quality Strategy, are:

- Achieving the EU established health-based standards and objectives for air pollutants and
- Ensuring that all new developments are ‘air quality neutral’ or better

The London Plan policies relating to air quality and development are set out below:

|                         |   |
|-------------------------|---|
| London Plan Policy 3.2  | The Mayor will take account of the potential impact of development proposals on health and health inequalities. This includes improving air quality and minimising exposure to existing poor air quality.   |
| London Plan Policy 5.3  | Sustainability principles include minimising air pollution. Major development proposals should meet the minimum standards outlined in the Mayor’s relevant Supplementary Planning Guidance (SPG).   |
| London Plan Policy 7.14 | Developers and contractors should follow the guidance set out in the SPGs with regard to the design and construction of their development. All development proposals within Air Quality Management Areas should address local problems of air quality and avoid the further deterioration of existing poor air quality. |

The Mayor has published two SPGs that deal with air quality:

- [Sustainable Design and Construction SPG](#) – this includes guidance on preparing air quality assessments, minimising emissions, addressing exposure to air pollution, air quality neutral and emissions standards for combustion plant
- [The Control of Dust and Emissions during Construction and Demolition SPG](#) – this describes the requirements for dust assessments, pollutant monitoring and the Ultra Low Emission Zone (ULEZ) standards for Non-Road Mobile Machinery (NRMM).

The requirements are briefly covered below with reference to specific guidance where you will find further detailed information.

Following the publication of the government’s Housing Standards Review in March 2015, the Air Quality Neutral benchmarks and on-site energy generation limits referenced below are not required for developments that are residential only. However, the Mayor of London and national government are obliged to have regard to compliance with EU limits for ambient atmospheric pollutant concentrations. In order to address the legal obligations, in particular with respect to NO<sub>2</sub>, developers need to implement the guidance below.

### 3.2.1 Air Quality Neutral

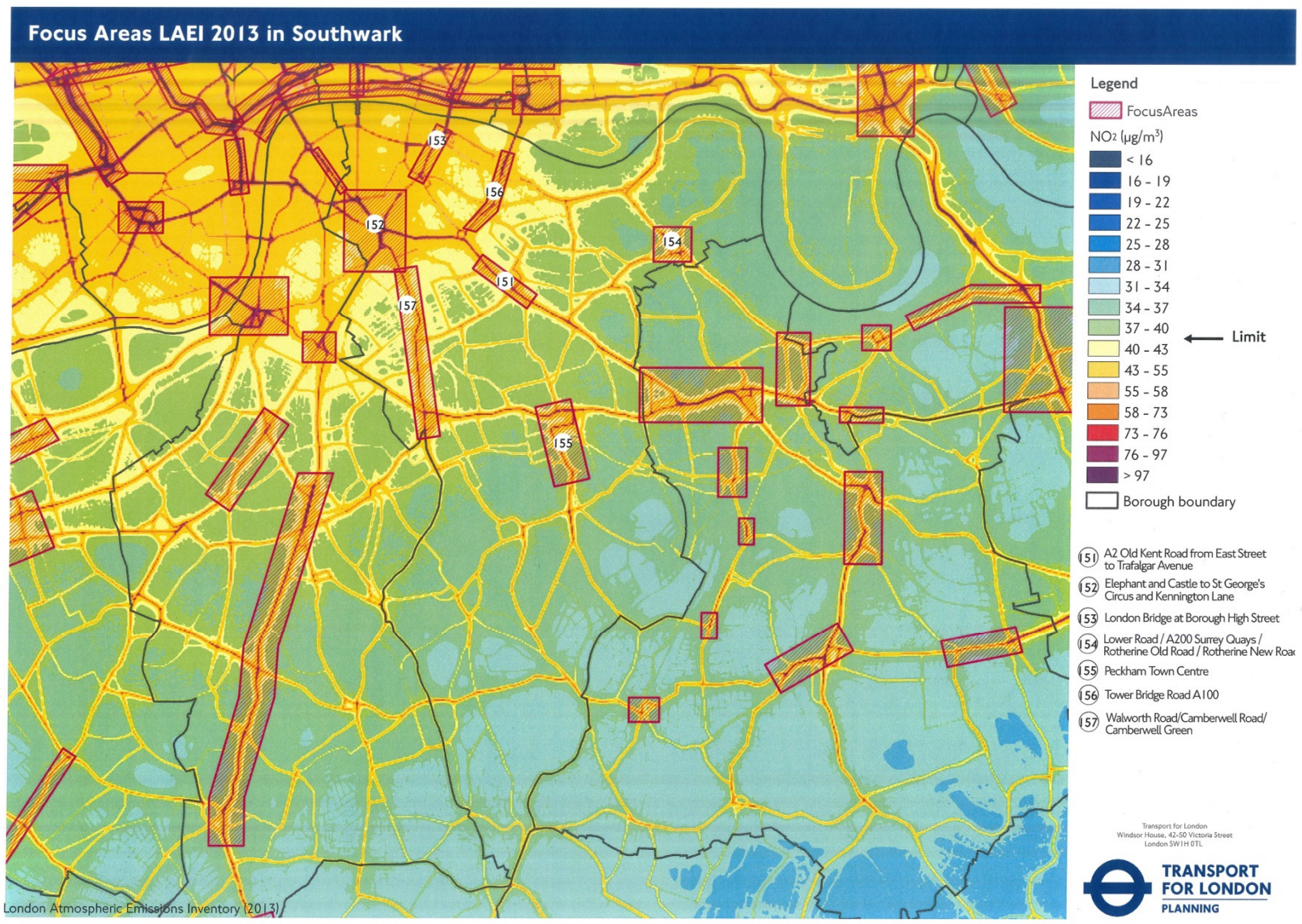
The calculation of emissions and comparison to the Air Quality Neutral benchmarks must be carried out as part of the assessment of air quality impacts. This is covered in Section 4. Where the Air Quality Neutral benchmarks cannot be met developers must undertake mitigation as described in Section 5 and/or make a contribution to off-setting their emissions as described in Section 6.

### 3.2.2 GLA Air Quality Focus Areas

In 2016 there were 186 Air Quality Focus Areas defined by the GLA in locations across London where the EU annual mean limit value for NO<sub>2</sub> is exceeded and there is high human exposure. These are not an exhaustive list of London’s air pollution hotspots, but do generally identify where exposure to poor air quality is most acute. The Air Quality Focus Areas are used by the GLA, TfL and the boroughs to inform local air quality management and the planning process.

The Air Quality Focus Areas in Southwark, and on the Authority’s boundary, can be seen in Map 2.

Map 2 GLA Air Quality Focus Areas in Southwark and the surrounding area



### 3.2.3 On-site Energy Generation

Developers should:

- Select plant that meets the emission limits for combined heat and power (CHP) and solid biomass boilers set out in 'Appendix 7: Emission Standards for solid biomass and CHP plant' in the [Sustainable Design and Construction SPG](#), and
- Install ultra-low NO<sub>x</sub> boilers.

In addition, flues and stacks should reach discharge velocities that are above the recommended minimum and they should terminate at a height that is above the eaves of nearby buildings. It should be noted that the use of biomass fuel is not recommended in Southwark due to background particulate pollutant levels.

The emissions from any on-site energy centre must form part of the development's Air Quality Assessment. See Section 4, Appendix B and complete the questionnaire in Appendix C.

### 3.2.4 Dust

An Air Quality and Dust Risk Assessment (AQDRA) is required as part of the assessment of air quality impacts. See Section 4.

### 3.2.5 Non-Road Mobile Machinery (NRMM)

The NRMM policy is detailed in the [The Control of Dust and Emissions during Construction and Demolition SPG](#) and is as follows:

- From 1 September 2015 NRMM with a net power between 37kW and 560kW and used in London will be required to meet the standards below. These apply to both variable and constant speed engines for both NO<sub>x</sub> and PM emissions. These standards are based on the engine emissions standards in EU Directive 97/68/EC and any subsequent amendments:
  - NRMM used on the site of any major development within Greater London will be required to meet Stage IIIA of the Directive as a minimum; and
  - NRMM used on any site within the Central Activity Zone or at Canary Wharf will be required to meet Stage IIIB of the Directive as a minimum
- From 1 September 2020 the following will apply:
  - NRMM used on any site within Greater London will be required to meet Stage IIIB of the Directive as a minimum
  - NRMM used on any site within the Central Activity Zone or Canary Wharf will be required to meet Stage IV of the Directive as a minimum
- The above requirements may be met by using the following techniques;

- Reorganisation of the company's NRMM fleet
- Replacing non-compliant equipment with (new or second hand) compliant equipment
- Retrofitting abatement technology to reduce plant emissions, and/or
- Re-engining

There are a small number of permitted exemptions to the above. Details of these can be found on the [London Low Emission Construction Partnership website](#)

Prior to the commencement of any works, all major developments across London and all developments within the Central Activity Zone and Canary Wharf must register their [NRMM online](#).

### 3.3 Local Planning Policy

When assessing development proposals that could affect air quality in the borough, the Council gives particular regard to the following policies:

#### 3.3.1 Southwark Plan

The Local Plan is currently being reviewed and updated. The New Southwark Plan is currently in its second draft and will be finalised in 2017. Click on the following link to obtain further information on the [New Southwark Plan](#). The New Southwark Plan will be the regeneration strategy for the borough up to 2033 and will be used to make decisions on planning applications. It will replace the Borough's Core strategy (2011) and the Saved Policies of the Southwark Plan (2007).

Within the New Southwark Plan, Policy DM 60 is the draft air quality policy.

#### **DM60 Improving Air Quality**

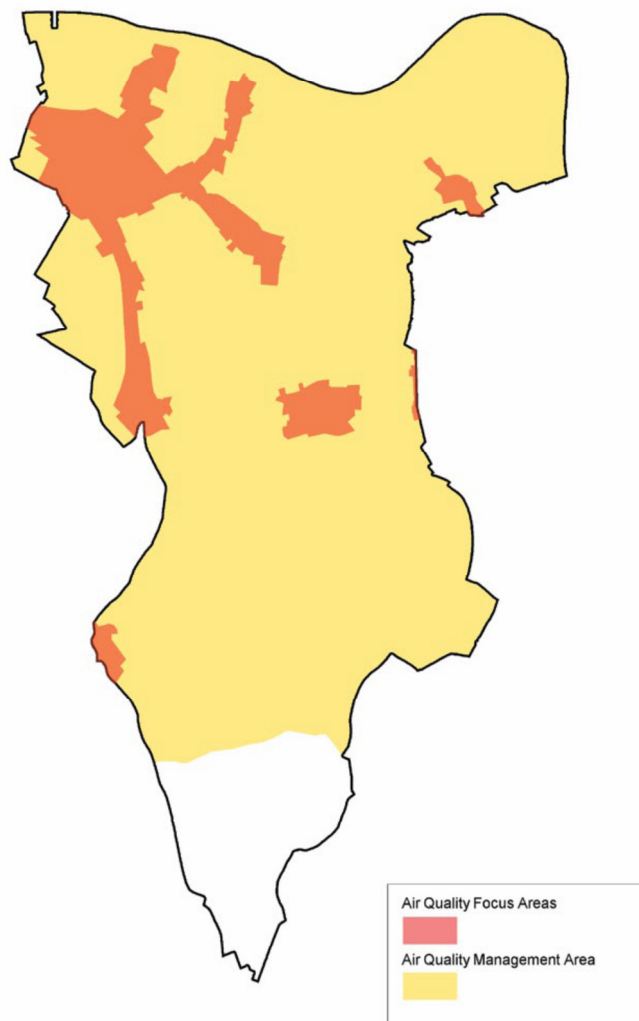
- 1 *Planning permission will be granted for development that:*
  - 1.1 *Achieves or exceeds air quality neutral standards; and*
  - 1.2 *Reduces the exposure and mitigates the effects of poor air quality on occupiers and users of new development in the Air Quality Management Area, through design solutions that may include orientation and layout of buildings and ventilation systems.*
  
- 2 *Planning permission will be granted for major development that:*
  - 2.1 *Provides measures to improve air quality on or as close to the site as possible where the site is located in an Air Quality Focus Area as set out in Figure 9. This must be achieved through measures beyond those implemented to achieve air quality neutral standards and will be commensurate to the scale of the development;*

- 2.2 Provides a financial contribution towards improving air quality within the vicinity of the development in exceptional circumstances where opportunities to improve local air quality are not provided on site.

### Reasons

Poor air quality, which includes high concentrations of particulate matter (such as  $PM_{10}$  and  $PM_{2.5}$ ) and nitrogen oxides (known as  $NO_x$ ) has a direct and adverse impact on the health and life expectancy of Londoners and on the natural environment. Developments that are Air Quality Neutral will help to minimise air pollution. Southwark has a designated Air Quality Management Area where our local air quality is below national standards.

Motorised road vehicles are the main pollution source of concentrations of poor air quality. Requiring development to deliver measures to reduce air pollution in the borough's road-based Air Quality Focus Areas will help address the areas worst affected by poor air quality.



**Map 3 Air Quality Management and Focus Areas from New Southwark Plan**

Within the Local Plan the current planning policies relating to air quality are contained within [Saved Policed policies of the Southwark Plan 2007](#) and the [Core Strategy 2011](#).

### 3.3.2 Saved Policies of the Southwark Plan 2007

The related air quality policies within the Saved Policies of the Southwark Plan 2007 are:

#### **Policy 3.1 - Environmental Effects**

*Planning permission for the establishment of uses that would cause material adverse effects on the environment will not be granted, and proposals for activities that will have a material adverse impact on the environment and quality of life will be refused.*

##### *Reasons*

*All new development has some kind of effect on the environment. This includes effects on ecosystems, natural resources (land, air and water), buildings and people. Effects can be temporary, permanent or cumulative. All effects need to be considered in assessing a planning application to determine whether the proposal is acceptable and whether any adverse effects will be able to be avoided or mitigated.*

#### **Policy 3.3 Sustainability Assessment**

*Planning permission will not be granted for Major Development unless the applicant demonstrates that the economic, environmental and social impacts of the proposal have been addressed through a Sustainability Assessment. The level of detail required in the Sustainability Assessment should correspond to the scale and complexity of the development.*

##### *Reasons*

*A Sustainability Assessment is required in order to assess the most sustainable option to:-*

- i. Ensure that their environmental, social and economic impacts are assessed and balanced to find the most sustainable option for the development;*
- ii. Demonstrate the impacts of developments and how they are being mitigated; and*
- iii. Meet government requirements in terms of Environmental Impact Assessments and Transport Assessments.*

*Further details setting out the format of the Sustainability Assessment are set out in the Sustainability Assessment Supplementary Planning Document.*

#### **Policy 3.6 – Air Quality**

*Planning permission will not be granted for development that would lead to a reduction in air quality.*

##### *Reasons*

*The Air Quality Management Area (AQMA) identifies where, in Southwark, levels of air quality are below national standards. The LPA has a responsibility to reduce activities which cause air pollution in order to contribute to achieving national air quality objectives. Southwark's Air Quality Strategy and Improvement Plan contain policies and measures to improve the air quality in Southwark including measures that address the emissions from industry, construction, domestic properties and traffic. The Strategy also promotes modal shifts towards public transport and low and zero emission vehicles and raises awareness of air quality issues. It identifies planning policies to be a key action in improving local air quality through influencing developments to consider air quality impacts.*

**Policy 4.2 – Quality of Residential Accommodation** *Planning permission will be granted for residential development, including dwellings within mixed use schemes, provided that they:-*

- i. Achieve good quality living conditions; and*
- ii. Include high standards of:*
  - Accessibility, including seeking to ensure that all new housing is built to Lifetime Homes standards;*
  - Privacy and outlook;*
  - Natural daylight and sunlight;*
  - Ventilation;*
  - Space including suitable outdoor/green space;*

- Safety and security; and
- Protection from pollution, including noise and light pollution.

#### Reasons

Good quality housing is necessary to provide for the accommodation needs of the borough, while also meeting the health, safety, quality of life and amenity needs of current and future residents.

### 3.3.3 The Core Strategy 2011

The current Core Strategy (2011) contains the following air quality local policies: -

#### **Strategic Policy 1 – Sustainable Development**

*Development will improve the places we live and work in and enable a better quality of life for Southwark's diverse population. It will help meet the needs of a growing population in a way that respects the limits of the planet's resources and protects the environment.*

#### **Strategic Policy 13 – High Environmental Standards**

*Development will help us live and work in a way that respects the limits of the planet's natural resources, reduces pollution and damage to the environment and helps us adapt to climate change.*

## 3.4 Other Policy Considerations

### 3.4.1 Permitting Under Part 1 of the Environmental Protection Act 1990

Industrial processes, which may range from large industrial plant to dry cleaners and paint spraying workshops, are regulated by the Environment Agency (Part A1 processes) and the local authorities (Part A2 and Part B processes). The planning regime assumes that the permitting regime will ensure any process complies with its permits. However, the planning regime can consider whether a land use is appropriate in a particular location and must consider the likely exposure of the public to potential pollutants. For developments requiring a planning application this is done as part of the planning process.

The Environment Agency has published a [guidance note](#) to assist developers to understand the:-

- Relationship between planning and permitting, it explains the roles and responsibilities of the regulators
- The type of advice the regulators will provide on permitting issues in the planning process

The Environment Agency has produced a [Horizontal Guidance Note](#) with a tool available at [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk). This assists the operators of processes to calculate the impact of any proposed pollutant releases (except radioactive substances) to various environmental media (land, water, air) when applying for a bespoke permit under the Environmental Permitting Regulations 2010.

Applications for planning permission and process permits can be made in parallel.



### 3.4.2 Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services

In June 2011 the Government published "[The Natural Choice : securing the value of nature](#)". This was the first Natural Environmental White Paper for 20 years to take action to halt the loss of biodiversity.

In August 2011 the UK government published "[Biodiversity 2020 : A strategy for England's wildlife an ecosystem services](#)". The mission of the strategy is

*"to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people".*

Priority Action 3.11 of the Biodiversity 2020 Strategy relates to air pollution. It states it will reduce air pollution impacts on biodiversity through approaches at national, EU and international levels by targeting the sectors that are the sources of the relevant pollutants i.e. nitrogen oxides, ozone, sulphur dioxide and ammonia.

In Southwark there are 59 Sites of Importance to Nature Conservation (SNIC). In the London area there are several areas of natural scientific interest, including Epping Forest. These sites are impacted by trans-boundary, national, regional and local air pollution. This includes pollution from Southwark.

There are more international obligations regarding air quality under the [Habitats Directive](#).

# 4 Assessing Air Quality Impacts in Southwark

In line with the policy context for all London, Southwark requires all new developments to be at least 'air quality neutral', and if necessary, for the planning application to be accompanied by an air quality assessment to show how emissions will be managed to prevent the further deterioration of existing poor air quality.

The Southwark requirements for the assessment of air quality for all new developments are shown in the sections below.

## 4.1 Overarching Principles of Assessment

### 4.1.1 Cumulative Impacts

Developers must assess the cumulative impact of multiple pollutant sources within and related to the new development e.g. the combined impact of vehicles and energy/heating sources. The developer must also assess the cumulative impact of the proposed development and all consented developments nearby i.e. within 500m of development boundary. Evidence of consideration of the cumulative impact must be shown in the air quality assessment for the development.

### 4.1.2 Conservative Approach

Where applicable, assessments should be carried out using a worst-case approach. For example, if certain parameters are unknown, worst case assumptions should be used to ensure that the assessment results are conservative in nature.

## 4.2 Construction Phase

For the assessment of air quality impacts from demolition, earthworks, construction, and track-out, developers and contractors should follow the guidance set out in [The Control of Dust and Emissions during Construction and Demolition SPG](#).

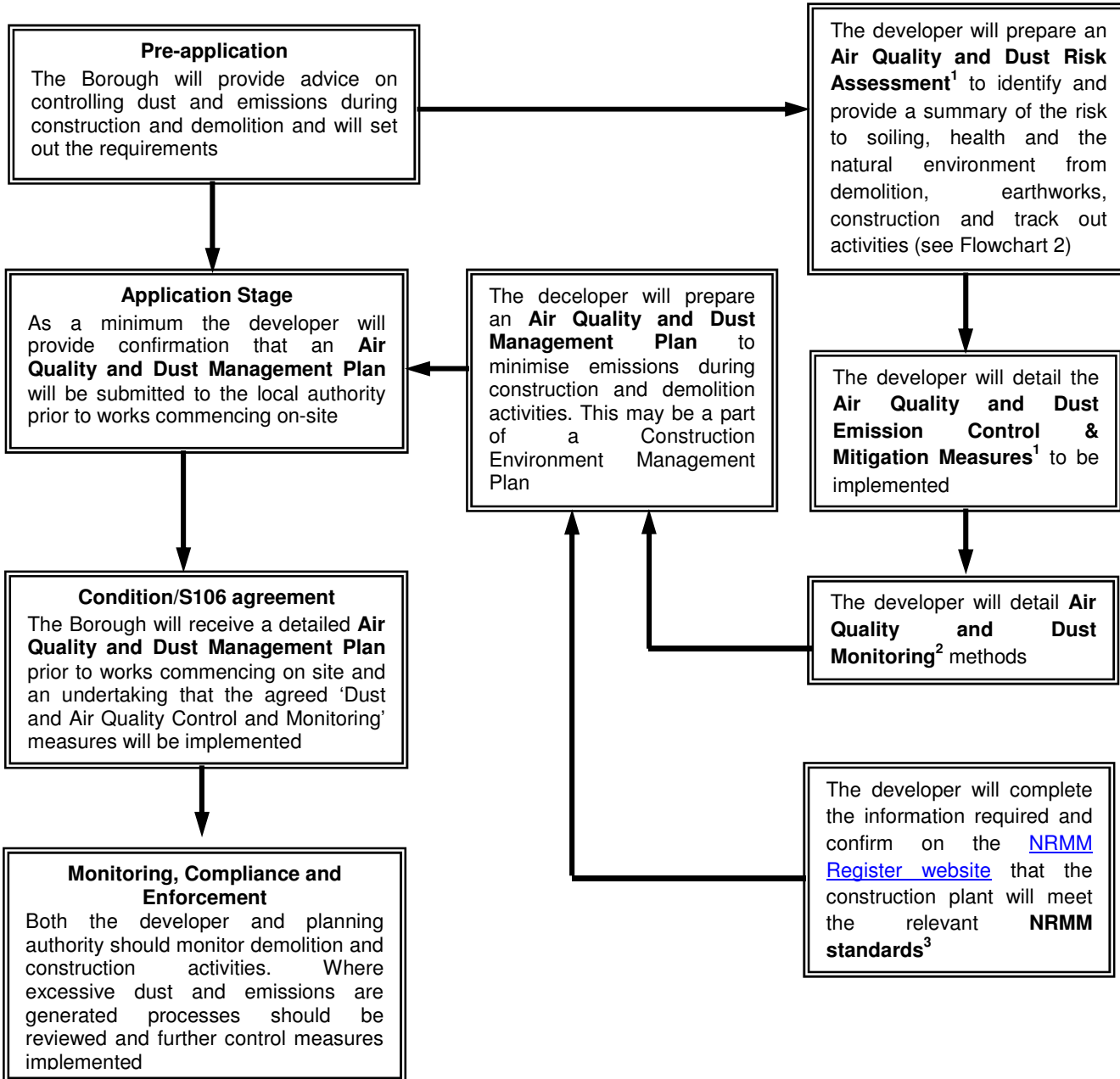
During the application phase an Air Quality and Dust Risk Assessment (AQDRA) should be provided by the developer which will identify if, as part of the required Construction Environment Management Plan, an Air Quality and Dust Management Plan (AQMDP) will be submitted prior to construction works commencing on-site.

The following section and flowcharts explain Southwark’s requirements for the Air Quality and Dust Management Plan.

**Flowchart 1 - Dust and Emissions Control Flow Chart through the Planning Process**

**Planning Application Stage**

**Developer actions**



<sup>1</sup> For further guidance see IAQM – “Guidance on the assessment of dust from demolition and construction” at <http://www.iaqm.co.uk/ext/guidance/construction-dust-2014.pdf>  
<sup>2</sup> For further guidance see IAQM – “Guidance on air quality monitoring in the vicinity of Demolition and Construction Sites” at <http://www.iaqm.co.uk/ext/guidance/construction-dust-2014.pdf>  
<sup>3</sup> The minimum, non-road mobile machinery standard for major development in Southwark is Stage IIIA until 2020 and Stage IIIB within the Mayor’s Central Activity Zone.

## 4.2.1 Air Quality and Dust Management Plan

During the planning application process the developer will be required to confirm they will submit an Air Quality and Dust Management Plan. This shall follow the guidance within the London Mayor's [Controlling Dust and Emissions During Construction SPG](#) and the relevant parts of the [Institute Air Quality Management Guidance Notes](#)

The Air Quality and Dust Management Plan (AQDMP) can be submitted as a separate document or as one of sections/chapters within an Environmental Construction Management Plan. The AQDMP will normally be secured through a submission of an application to discharge a planning condition or as a requirement within the Section 106 legal agreement. The AQDMP will contain the following sections.

### Introduction

The introduction will outline the development proposals, a description of the area, list the proposed works and provide a site location plan.

### Risk Assessment

Using the details the introduction the developer will devise an Air Quality & Dust Risk Assessment. Flowchart 2 outlines the steps in preparing the risk assessment.

### Mitigation measures

The developer will use the risk assessment to devise the site specific "Dust and Air Quality Emission Control Measures" that will be implemented on the site to protect the health of workers, residents and the amenity of the surrounding area. Examples of mitigation methods are listed in Section 8.3 of the IAQM Guidance on the assessment of dust from demolition and construction.

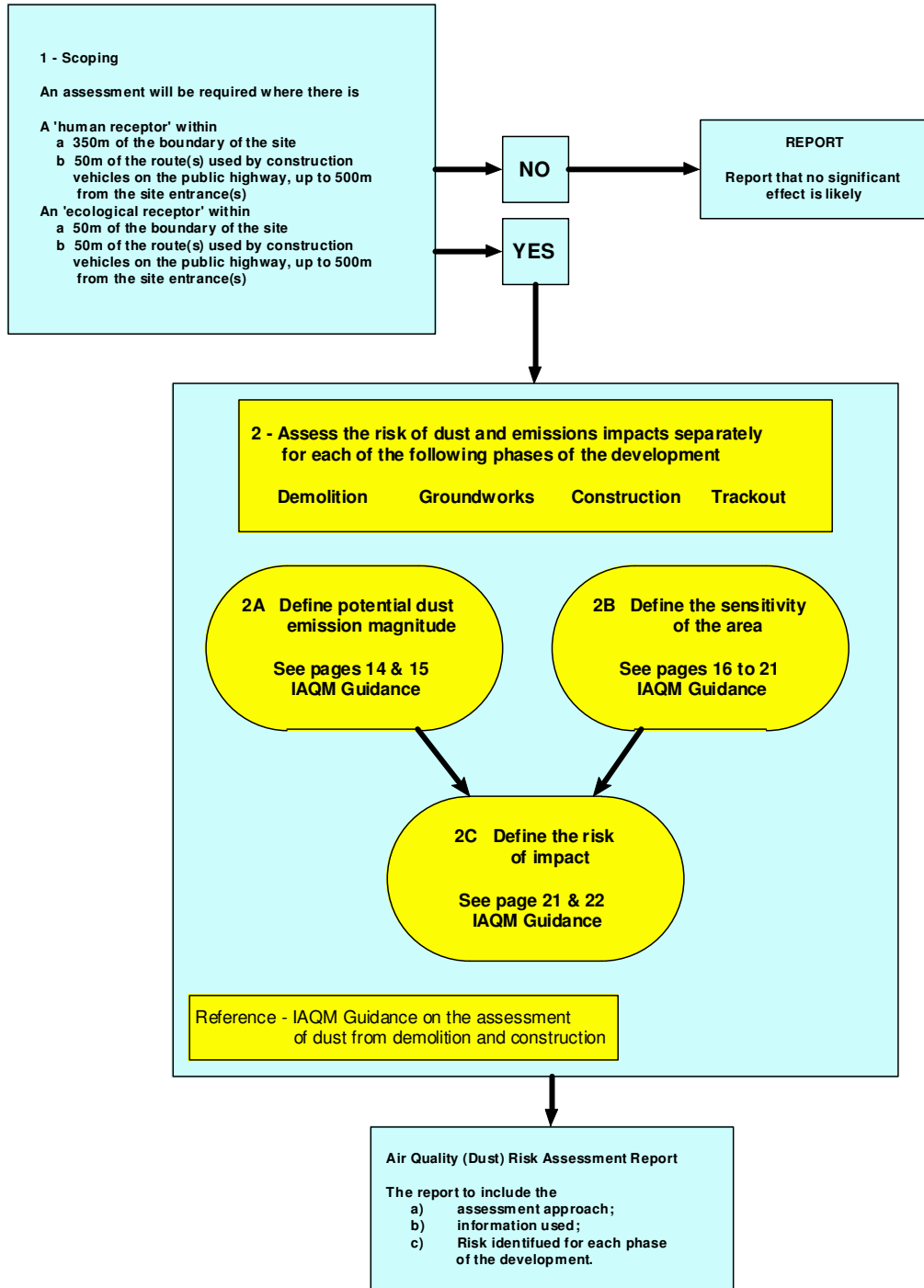
### Dust monitoring

This section will detail the air quality monitoring to be installed on site. Information on the monitoring locations, methods of measurement, pollutant trigger (take management action to control emissions) and action (stop work until emissions are under control) limits and reporting mechanisms will also be included. The IAQM "[Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites](#)" details appropriate monitoring for the scale of the site or project.

|                                     | Trigger Limit (averaged over a 15 minutes period) | Action Limit (averaged over a 15 minutes period) |
|-------------------------------------|---|--|
| Total suspended Particles (TSP)     | 300 $\mu\text{g.m}^{-3}$                          | 350 $\mu\text{g.m}^{-3}$                         |
| Particular matter PM <sub>10</sub>  | 200 $\mu\text{g.m}^{-3}$                          | 250 $\mu\text{g.m}^{-3}$                         |
| Particular matter PM <sub>2,5</sub> | 75 $\mu\text{g.m}^{-3}$                           | 100 $\mu\text{g.m}^{-3}$                         |

The combined Air Quality & Dust Risk Assessment, the Dust and Air Quality Emission Control Measures and the site's air quality monitoring results will together form the Air Quality and Dust Management Plan for the site. The Air Quality and Dust Management Plan is a living document that must be reviewed for each phase of the build (demolition, groundworks, building above grade, & fit-out/landscaping)

**Flowchart 2 - Steps to perform a dust and emissions assessment**



## 4.3 Air Quality Neutral

Developers will need to:

- Determine the relevant building and transport emission benchmarks for NO<sub>2</sub> and PM<sub>10</sub> for the current site, based on its land use class, use and location. See Appendices 5 and 6 in the Sustainable Design and Construction SPG and [Air Quality Neutral Planning Support Update: GLA 80371, April 2014](#)
- Calculate the NO<sub>2</sub> and PM<sub>10</sub> emissions for the proposed development and compare it with the benchmark of the current buildings emissions on the site.
- Calculate the proposed developments NO<sub>2</sub> and PM<sub>10</sub> transport emissions and compare them with the benchmark of the current transport emissions related to the site use
- Ensure both the building and transport emission benchmarks are met or improved upon i.e. reduced

Where the benchmarks cannot be met developers must undertake mitigation as described in Section 5 and/or make a contribution to off-setting their emissions as described in Section 6.

## 4.4 Air Quality Assessments

If the development is within the Southwark AQMA developers are likely to be required to carry out an air quality assessment. Assessments will be required to accompany planning applications for developments that have the potential to have a negative impact on air quality or introduce a uses that is sensitive to poor air quality, such as residential, educational or a nursery.

Where an air quality assessment is required, air quality, dust and odour must be assessed for the both the construction and operational phases. The box below shows the criteria that will be considered when deciding whether an assessment is required. Appendix B provides further advice on carrying out an assessment.

Within the air quality assessment the developer will need to show that the hierarchy outlined below, in the priority order listed will be considered.

1. Preventing or avoiding exposure – by eliminating, isolating or replacing sources and/or activities with alternatives, once all reasonable options preventing or avoiding exposure have been implemented
2. Reduction and minimisation of exposure – by considering:-
  - Mitigation measures – that act on the pollution source
  - Mitigation measures – that act on the pollution pathway
  - Mitigation measures – at or close to the point of exposure

3. Off-setting a new development's air quality impact by proportionately contributing to air quality improvement elsewhere in Southwark

**An Air Quality Assessment will be required for developments:**

- with potential to significantly change road traffic on any road exceeding 10,000 vehicles per day. Significant changes include:
  - increase in traffic volumes > 5% (Annual Average Daily Traffic (AADT) – or peak)
  - lower average vehicle speed or significant increase in congestion
  - significant increase in the percentage of HGVs
- that introduce or increase car parking facilities by 100 spaces or more
- with commercial floor space of more than 1,000sq m
- with more than 75 homes
- where people will be exposed to poor air quality for significant periods of the day, e.g. developments located on busy roads
- with biomass boilers, biomass or gas combined heat and power (CHP)
- that involve industrial or commercial floor space regulation under the Environmental Permitting (England and Wales) Regulations (EPR)
- that are subject to Environmental Assessment under the Town and Country Planning (Environmental Impact Assessment) Regulations 1999

## 4.5 Assessment of odours

If the planning application is for an activity that may release odours or are for a sensitive use close to an existing odourous process, then a odour assessment will be required to be submitted as part of the application.

The Institute of Air Quality Management has produced [“Guidance on the assessment of odour for planning”](#) to assist developers produce a suitable odour impact assessment.

## 4.6 Commercial Kitchen Flues

For developments that incorporate a commercial kitchen the developer will need to follow the Defra [“Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems”](#) and ensure that commercial kitchen odours do not cause an impact in the amenity of adjacent land uses. If the proposal is for mixed use residential & commercial premises that will or could incorporate a commercial kitchen, then the plans must show a ventilation flue of adequate dimension, with a suitable route to discharge fumes at above the eaves of the building. As part of the planning application documentation the developer shall submit the information listed in Appendix C. This appendix is a copy of Annex B from the above Defra Guidance.

## 4.6 Ventilation of Residential Developments

The ventilation intake for residential buildings shall be as far away as is practical from nearby pollution sources e.g. heating flues, busy road frontages, car parking areas etc. The intake should normally be at height or roof level.

## 4.7 Chimney & Flue Heights

When a chimney, flue or stack is included in a development, the developer will need to submit an application for approval of the of the chimney or flue height to Southwark's Environmental Protection Team in parallel with the planning application. An application form can be found in Appendix D of this document.

Flowchart C2 in Annex C of [LLAQM TG\(16\)](#) assists developers to select the most appropriate screening method to assess the impact of stack emissions on the local air quality.

If the final design of the development is not available at the time of the planning application (e.g. outline stage) then the air quality assessment will need to include a section where the maximum relevant parameters are assumed and the chimney or flue height is calculated. The maximum relevant parameters are then used as the criteria for the mechanical services engineer or heating & ventilation company when designing the plant later in the development process.

## 4.8 Smoke Control Areas

Under Section 18 of the Clean Air Act 1993 the whole of Southwark has been declared a Smoke Control Area.

The consequence of this declaration is that in the London Borough of Southwark:-

- You cannot cause smoke by burning coal, wood or oil in any open fireplace
- You must only [burn approved smokeless fuels](#) in an open fireplace.
- You must burn smoke generating fuels in an [exempt appliance](#) or exempted fireplace using the specified fuel(s) for that appliance and with it operated in accordance with the instruction and installation manuals.



# 5 Mitigating Air Quality Impacts in L.B Southwark

Southwark requires the sustainable design principles described in [The Sustainable Design and Construction SPG](#) to be built into the design of all planning applications. The design of a development should be such that the exposure of the occupants to existing poor air quality is minimised. Developers should seek to further mitigate any residual impacts and should provide off-site local off-setting measures to address any negative air quality impact associated with the development proposals.

The following sections describe the types of mitigation of residual emissions Southwark expect as part of a planning application.

## 5.1 Traffic Reduction and Low Emission Strategies

Emissions from road traffic are the dominant source of elevated pollutant concentrations in Southwark. Traffic reduction strategies for any development could include:

- Adoption of car free and car restricted developments
- Provision of secure cycling storage facilities
- Green travel plans
- Provision of car club bays, and
- Provision of infrastructure for low emission vehicles such as electric vehicle recharging points.

### **Southwark Core Strategy - Strategic Policy 2 – Sustainable transport**

#### **The local authority approach is:**

*We will encourage walking, cycling and the use of public transport rather than travel by car. This will help create safe, attractive, vibrant and healthy places for people to live and work by reducing congestion, traffic and pollution.*

#### **We will do this by**

1. *Planning places and development with priority for walking and cycling, whilst maximising the use of public transport and minimising car use.*
2. *Directing large developments to areas that are very accessible by walking, cycling and public transport.*
3. *Safeguarding land for planned public transport improvements and where the need arises in the future.*
4. *Improving access to mixed use town and local centres.*

5. *Encouraging use of the River Thames for transport and improving links between Southwark and north of the river.*
6. *Requiring a transport assessment with applications to show that schemes minimise their impacts, minimise car parking and maximise cycle parking to provide as many sustainable transport options as possible.*

### **Southwark Core Strategy - Strategic Policy 13 – High environmental standards**

#### **The local authority approach is:**

*Development will help us live and work in a way that respects the limits of the planet's natural resources, reduces pollution and damage to the environment and helps us adapt to climate change.*

#### **We will do this by**

1. *Requiring development to meet the highest possible environmental standards, including targets based on the Code for Sustainable Homes and BREEAM.*
2. *Requiring all new development to be designed and built to minimise greenhouse gas emissions across its lifetime. This will be achieved by applying the energy hierarchy:*
  - *Designing all developments so that they require as little energy as possible to build and use*
  - *Expecting all major developments to set up and/or connect to local energy generation networks where possible. We will develop local energy networks across Southwark*
  - *Requiring developments to use low and zero carbon sources of energy*

3. *Enabling existing buildings to become more energy efficient and make use of low and zero carbon sources of energy.*
4. *Increasing recycling and composting, minimising waste, reducing landfill and making more use of waste as a resource.*

*By 2015 we will be recycling and composting at least 45% of municipal waste, 50% by 2020 and aspiring to achieve 60% by 2031. By 2020, we will be recycling at least 70% of commercial and industrial waste. We are aiming to meet the Mayor's target of recycling or reusing 95% of construction, excavation and demolition waste by 2020.*

5. *Requiring applicants to demonstrate how they will avoid waste and minimise landfill from construction and use of a development.*
6. *We will meet the London Plan waste apportionment target set for Southwark of managing at least 243,000 tonnes of waste by 2016, at least 275,000 tonnes by 2021 and at least 343,000 tonnes by 2031. We will implement this through a development plan document and our Waste Management strategy. We are building a state of the art resources centre at Old Kent Road to help us meet this target. We have set aside enough facilities and land to make sure we can fully meet our targets.*
7. *Requiring developments to minimise water use and use local sources of water where possible.*
8. *Setting high standards and supporting measures for reducing air, land, water, noise and light pollution and avoiding amenity and environmental problems that affect how we enjoy the environment in which we live and work. This includes making sure developments are designed to cope with climate conditions as they change during the development's lifetime.*

9. *Allowing development to occur in the protected Thames flood zone as long as it is designed to be safe and resilient to flooding and meets the Exceptions Test.*

## 5.2 Sustainable Building Design

The sustainable design principles advise on energy efficient design, retro-fitting measures, pollution control and urban greening, all of which reduce energy use and hence reduce air pollution. In addition, the design and layout of development to increase distances from sources of air pollution to human receptors will reduce the pollution exposure of building occupants. This is particularly relevant where developments include sensitive uses such as hospitals, schools and play areas.

For new developments the Council requires the impact of outdoor air pollution on indoor air quality be taken into account at the earliest stages of building design. Ventilation inlets should be on higher floors and on facades away from air pollution sources. On highly trafficked roads residential units may not be permitted opening windows on lower floors.

The location of outside space is an important consideration and any exposure of gardens and roof terraces to poor air quality should be assessed and, where practicable, exposure should be minimised through appropriate positioning and orientation. Do not to locate exhaust flues and vents close to gardens, balconies or terraces.

The development should avoid creating an urban canyon effect where emissions become trapped. Canyons occur where there are high buildings either side of a trafficked thoroughfare and the height of the buildings is greater than the separation width.

### 5.2.1 Heating and Energy Supply

Sustainable design principles require developments to make the fullest contribution to the adaptation to, and mitigation of, climate change and to minimise carbon dioxide emissions. Installing efficient and/or renewable energy technologies such as solar water heating, district heating, ground source, photovoltaic panels, heat exchangers, etc. will minimise emissions and help improve air quality.

If gas boilers are installed in developments they must be ultra-low NO<sub>x</sub> boilers<sup>4</sup> (<40mgNO<sub>x</sub>/kWh).

When appropriately sited and specified in accordance with the energy demands of the building, Combined Heat and Power (CHP) plants and biomass boilers can give benefits in terms of carbon emissions. However, they give rise to increased emissions of NO<sub>x</sub> and PM<sub>10</sub> in

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<sup>4</sup> Following the publication of the government's Housing Standards Review in March 2015, the requirement for ultra-low NO<sub>x</sub> boilers and the on-site energy generation limits referenced cannot be required for developments that only residential. However, the Mayor of London and national government have obligations regarding compliance with the EU limits for ambient concentrations. In order to address those obligations, in particular with respect to NO<sub>2</sub>, developers are strongly encouraged to implement this guidance.

comparison to regular gas boilers. Developers should ensure that the emission standards set in the [Sustainable Design and Construction SPG](#) are not exceeded, see paragraph 4.3.21, and Appendix 7 of the SPG. Where CHPs or biomass are permitted they will be required to meet high standards of air pollution control, with particular emphasis on:

- Boiler design and operation
- Pollution abatement equipment
- The servicing and maintenance regime
- Fuel quality, storage and delivery and
- Exhaust stack height

The developer or managing agents must ensure that any energy plant installed in a development has arrangements in place to keep it operated in accordance with manufacturers instructions throughout its functional life.

### 5.2.2 Emergency Generators

Emergency diesel generators are installed as backup power for emergency life-saving purposes, for passengers in tall buildings, vital computer suites or emergency lighting. These generators are usually run monthly as part of their maintenance regime. When maintenance runs are initiated there is usually a large plume of black smoke emitted. Therefore, it is essential that these flues are situated at height and well away from air intakes, balconies, roof terraces and openable windows.

When installing an emergency generator Southwark will require the applicant justify its purpose and complete a HMIP Technical Guidance TGND D1 “Guidelines on discharge stack heights for polluting emissions” calculation to ensure that the flue will not cause an amenity problem in adjacent areas.

Southwark will permit the maximum capacity of any emergency generator fuel tank to be able to run for 12 hours, with consideration of up to 24 hours for life critical systems.

### 5.2.3 Medium & Large Combustion Plants

Combustion plant with a rated thermal input equal or greater than 1MW and less than 50MW, irrespective of the type of fuel they use, will be required to apply for a medium combustion plant permit and registration from December 2017. Existing medium combustion plants require a permit and registration depending on the rated thermal input of the plant and their specific legislative timetable. Plant with a rated thermal input equal or greater than 50MW have to meet the requirements of a [Large Combustion Plant permit](#).

# 6 Planning Conditions and Section 106 Obligations in L.B. Southwark

Planning permission is frequently granted subject to conditions. Conditions are a useful tool to enhance quality and to ameliorate adverse impacts. Planning obligations (under Section 106 of the Town and Country Planning Act 1990 (as amended)) can also be used as a mechanism for site specific mitigation.

Some developments are required to pay the [Community Infrastructure Levy \(CIL\)](#). At present Southwark does not have a direct air quality component within the [CIL Regulation 123 list](#). However the list does include several public transport projects e.g. Bakerloo line extension to Lewisham, new cycle and pedestrian Thames crossing and Quietway cycle routes amongst others.

In the '[Section 106 Planning Obligations and Community Infrastructure Levy \(CIL\) Supplementary Planning Document](#)', paragraph 3.4 includes "Measures to improve and address negative impacts on air quality and noise". The scale of the planning obligation is dealt with on a case by case basis.

Conditions and planning obligations seeking to improve air quality may take a number of forms. The below is an indicative list of conditions or obligations that could be implemented:

- Construction Phase:
  - Restricting the use of certain vehicles
  - Permitting the use of certain vehicles
  - Setting emissions standards for vehicles and construction plant
  - Making provisions for waste and construction materials transportation to and from development sites by rail or river, where practicable
  - Dust monitoring in real time with an alert to the site manager to enable rapid action to be taken when dust levels reach/breach limits
  
- Operational Phase:
  - Requiring the developer to submit an emissions assessment and a low emission strategy
  - Maintenance of pollution emitting plant
  - Measures to reduce emissions including sustainable building design, travel plans, etc.
  - Restricting on site car parking
  - Alternative transport provision such as car club bays, vehicle charging, secure cycling parking, etc.

- Contribution to public transport improvements or congestion reducing traffic management measures
- Creation and maintenance of green infrastructure
- One-off financial payment or contribution for implementation of an air quality improvement action

Planning conditions must meet the government's requirements as set out in [Circular 11/1995](#) and S106 planning obligations must comply with paragraphs 203-206 of the [National Planning Policy Framework](#).

# Appendix A – Information Sources

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| <p>Southwark</p>   | <p><b>Environmental Protection Team</b></p> <p><a href="mailto:environmental.protection@southwark.gov.uk">environmental.protection@southwark.gov.uk</a></p> <ul style="list-style-type: none"> <li>• Air Quality Strategy</li> <li>• Air Quality Action Plans 2012-17 &amp; 2017-22</li> <li>• Annual Status Reports</li> <li>• Historical Update &amp; Screening Assessments &amp; Progress Reports</li> </ul> <p>The above air quality documents can be found at:-</p> <p><a href="http://www.southwark.gov.uk/air-quality/strategies-plans-and-reports">http://www.southwark.gov.uk/air-quality/strategies-plans-and-reports</a></p> <p><b>Planning Services</b></p> <p><a href="mailto:planning.enquiries@southwark.gov.uk">planning.enquiries@southwark.gov.uk</a></p> <p>Local Plan &amp; Core Strategy, etc. can be found at:-</p> <p><a href="http://www.southwark.gov.uk/planning-and-building-control/planning-policy-and-transport-policy/development-plan/local-plan">http://www.southwark.gov.uk/planning-and-building-control/planning-policy-and-transport-policy/development-plan/local-plan</a></p>  |
| <p>Greater London Authority<br/>&amp;<br/>Association of London Government</p> | <p>The London Plan – The Spatial Development Strategy for London Consolidated with Alterations Since 2011, March 2015<br/><a href="https://www.london.gov.uk/priorities/planning/london-plan">https://www.london.gov.uk/priorities/planning/london-plan</a></p> <ul style="list-style-type: none"> <li>• Clearing the Air – The Mayor’s Air Quality Strategy, December 2010<br/><a href="https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/mayors-air-quality-strategy">https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/mayors-air-quality-strategy</a></li> <li>• Sustainable Design and Construction Supplementary Planning Guidance, April 2014<br/><a href="https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/sustainable-design-and">https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/sustainable-design-and</a></li> <li>• The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance, July 2014,<br/><a href="https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/control-dust-and">https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/control-dust-and</a></li> </ul> |

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|---|---|
|   | <ul style="list-style-type: none"> <li>• Technical Guidance Note: Assessment of Air Quality Issues of Planning Applications, 2006, Association of London Government (ALG) <a href="http://www.londoncouncils.gov.uk/download/file/fid/7741">www.londoncouncils.gov.uk/download/file/fid/7741</a></li> </ul>   |
| Other Air Quality Regulation & Guidance | <ul style="list-style-type: none"> <li>• Air Quality Standards Regulations 2010<br/><a href="http://www.legislation.gov.uk/ukxi/2010/1001/contents/made">http://www.legislation.gov.uk/ukxi/2010/1001/contents/made</a></li> <li>• UK Air Quality Strategy for England, Scotland, Wales and Northern Ireland, July 2007<br/><a href="https://www.gov.uk/government/publications/the-air-quality-strategy-for-england-scotland-wales-and-northern-ireland-volume-1">https://www.gov.uk/government/publications/the-air-quality-strategy-for-england-scotland-wales-and-northern-ireland-volume-1</a></li> <li>• National Planning Policy Framework, March 2012, Department for Communities and Local Government<br/><a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf</a></li> <li>• Defra (2016). Local Air Quality Management Technical Guidance LAQM.TG(16)<br/><a href="http://laqm.defra.gov.uk/technical-guidance/">http://laqm.defra.gov.uk/technical-guidance/</a></li> <li>• GLA (2016) London Local Air Quality Management Technical Guidance LLAQM TG(16)<br/><a href="https://www.london.gov.uk/sites/default/files/llaqm_technical_guidance_llaqm.tg_16.pdf">https://www.london.gov.uk/sites/default/files/llaqm_technical_guidance_llaqm.tg_16.pdf</a></li> <li>• Defra, Emissions Factor Toolkit<br/><a href="http://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html">http://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html</a></li> <li>• Low Emission Strategies Partnership includes useful tools and resources <a href="http://www.lowemissionstrategies.org/">http://www.lowemissionstrategies.org/</a></li> <li>• EPUK (2013) Solid Fuel and Air Quality An Update for Local Authorities accessed at <a href="http://www.environmental-protection.org.uk/wp-content/uploads/2013/07/Solid-Fuel-and-Air-Quality-Update-for-LAs-final-060413.pdf">http://www.environmental-protection.org.uk/wp-content/uploads/2013/07/Solid-Fuel-and-Air-Quality-Update-for-LAs-final-060413.pdf</a></li> <li>• IAQM - Guidance on the assessment of dust from demolition and</li> </ul> |



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|              | <p>construction <a href="http://iaqm.co.uk/text/guidance/construction-dust-2014.pdf">http://iaqm.co.uk/text/guidance/construction-dust-2014.pdf</a></p> <ul style="list-style-type: none"> <li>• IAQM – “Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites” <a href="http://www.iaqm.co.uk/wp-content/uploads/guidance/monitoring_construction_sites_2012.pdf">http://www.iaqm.co.uk/wp-content/uploads/guidance/monitoring_construction_sites_2012.pdf</a></li> <li>• IAQM – “Guidance on Air Quality Land-Use Planning &amp; Development Control: Planning For Air Quality 2015 (IAQM)” <a href="http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf">http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf</a></li> </ul>   |
| Data Sources | <ul style="list-style-type: none"> <li>• Pollutant and Release Transfer Register <a href="https://www.gov.uk/guidance/uk-pollutant-release-and-transfer-register-prtr-data-sets">https://www.gov.uk/guidance/uk-pollutant-release-and-transfer-register-prtr-data-sets</a></li> <li>• London Atmospheric Emissions Inventory (LAEI) <a href="http://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013">http://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013</a></li> <li>• National Atmospheric Emissions Inventory (NAEI) <a href="http://naei.defra.gov.uk/">http://naei.defra.gov.uk/</a></li> <li>• Government Open Datashare <a href="https://data.gov.uk/data/search">https://data.gov.uk/data/search</a></li> <li>• Air Pollution Information System <a href="http://www.apis.ac.uk/">http://www.apis.ac.uk/</a></li> </ul> |

# Appendix B – Requirements of an Air Quality Assessment

An air quality assessment may be being carried out because a development will potentially contribute to poor air quality or because the development would introduce new receptors into an area of poor air quality. The emissions contribution maybe due to the construction or operational phase of the development. The air quality assessment should be proportionate to the nature and scale of the development proposed.

The scope of an air quality impact assessment is:

- Assess ambient local air quality – specific pollutants, dust, odour
- Assess the impact of the development during the construction phase – dust, NRMM emissions
- Predict the future air quality both with and without the proposed development. Include all consented development and compare with the air quality objectives

The following advice should be considered:

- Emissions:** Create an inventory of the PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>x</sub> emissions associated with the proposed development, including the type and quantity of emission concentrations, during the construction and operational phase. This shall cover transport, stationary and mobile emission sources. Sources of emissions data include [Defra's Emissions Factor Toolkit](#) and the [London Atmospheric Emissions Inventory \(LAEI\)](#).
- Emission Factors.** Use the latest version of emission factors produced. These can be found at <http://naei.defra.gov.uk/data/ef-all>.
- Dispersion Modelling:** Use an atmospheric dispersion model to predict the current baseline and future PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>x</sub> concentrations. Predictions of future concentrations should be both with and without the proposed development. Dispersion modelling shall be carried out in accordance with GLA's LLAQM Technical Guidance Note (TG16).
- Significance:** The over-riding test for significance is whether the proposed development is air quality neutral or not. For uses not covered by air quality neutral or for additional assessment use Table 6.3 of the [IAQM Land-Use Planning & Development Control: Planning For Air Quality](#) guidance.
- Cumulative impacts:** Consider the potential cumulative air quality impact that may arise during the construction or operational phases. Include information within a 500m radius of the development.

- f) **On-site energy generation:** For applications that include biomass boilers or biomass CHP, the air quality assessment shall compare the air quality impact of emissions from the intended biomass boiler or CHP with gas powered plant of identical thermal rating.

Where a biomass boiler, combined heat and power (CHP) plant or combined cooling, heating and power (CCHP) plant are to be used for on-site energy generation, you must specify technical details related to the appliance, its fuel type, emission concentrations, maintenance schedule and exhaust stack. (See Appendix D)

- g) **Exposure:** The number and distribution of current and new occupiers and users of the site and adjacent sites who will be exposed to poor air quality as a result of the development. For further information refer to the Environmental Protection UK Guidance Note: [Development Control: Planning For Air Quality \(2010 Update\)](#) or IAQM Land-Use Planning & Development Control: Planning For Air Quality 2017 accessed at <http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>
- h) **Sensitive receptors:** Sensitive receptors are assessed due to location/nearness, age & health and must be identified as part of the assessment.
- i) **Ecological receptors:** Assessment of the impact on ecological receptors is not likely to be required for road traffic or for combustion sources under 20MW thermal input.
- j) **Mitigation:** An outline of, and justification for, mitigation measures associated with the design, location, operation and construction of the development in order to reduce air pollution and exposure to poor quality air.

# Appendix C – Information Required to Support a Planning Application for a Commercial Kitchen

The aim of any installed commercial kitchen ventilation/extraction system is to ensure that no loss of amenity is caused to nearby properties due to odour, fumes, droplets or noise from its operation. The visual appearance of the flue may also be important depending on its location. Enquiries should be made to the Planning Department if the location is visually sensitive.

A suitably qualified and experienced person with specialist knowledge of ventilation schemes should undertake the design and installation of a ventilation and filtration system.

In circumstances where the end user of the premises is unknown, or where the specific type of food to be cooked is unknown, the installation should be designed to achieve the highest level of odour control in order to cater for a worst case scenario, i.e. for fried and grilled meats and fish.

There are many different types of odour abatement available e.g. grease filters, carbon filters, electrostatic precipitation, high dilution systems and high velocity extraction. It is usual for a filtration system to have 3 stages.

Please note that any reference to minimum standards within the document is for guidance only and more stringent controls may be deemed appropriate in some circumstances.

To enable the Local Authority Planning Department to assess the suitability of the ventilation scheme the following information should be provided.

## 1. Information on premises

The following information should be supplied:

- The number of meals to be served per day
- The method(s) of preparation and cooking
- The types of meal/menu intended to be served, e.g. fish and chips, chicken shop, burger bar, Chinese, Indian, pizzas, etc.
- Proposed hours of operation of the business and any ventilation plant

## 2. Plans and drawings

Provide scale plans showing the internal arrangement of the premises and the location of the ventilation system within the premises. The plans must show the:-

- Dimensions
- Route
- Characteristics (i.e. appearance of the ductwork) in relation to the building
- External elevations

The location of all filters, fan and silencers must be clearly marked. Where the location of a filter is shown the filter type must be clearly identified and cross-referenced to a detailed product specification.

## 3. Filters including Electro-static Precipitators (ESP)

A copy of the manufacturer's product data sheet for any filters proposed should be supplied clearly showing:

- Manufacturer's name
- Filter name and product code
- Dimensions
- Nature of the filter media
- Flow rate rating
- Manufacturer's recommendations on the frequency and type of maintenance of the pre-filter having regard to the conditions/load that it will be used under.

## 4. Carbon Filters

All of the above information plus:

- The nature of the carbon (including product type)
- The total number of carbon panels in the filter bed
- The frequency of replacement of the carbon units having regard to the conditions that it will be used under. The assumptions to this calculation must be clearly stated, including the frequency and duration of use. The manufacturer should provide recommendations on the frequency and type of maintenance required
- Total volume of carbon expressed in cubic metres
- Total mass of carbon expressed in kilograms
- Total surface area of the panels exposed to the exhausted air; and
- Dwell time of the gases in the filter compartment and the control setting at which this is achieved. The assumptions to this calculation must be clearly stated, and should include the air change rate for the setting quoted.

## 5. Odour counteractant or neutralising system

Where proposed, the details and type of any counteractant or neutralising system should be identified. A copy of the manufacturer's product data sheet should be supplied that clearly shows:

- Manufacturer's name
- Name of delivery system and product code
- Counteractant or neutralising chemical to be used
- COSHH data sheets for chemical to be used; and
- Anticipated counteractant or neutralising delivery rate.

## 6. Cooker hood

The following information on the characteristics of the cooker hood should be supplied that clearly shows the:

- Length that the cooker hood overhangs the appliances
- Face velocity at the cooker hood, expressed in metres per second; and
- Dimensions of the opening of the cooker hood.

## 7. System Operation

In addition to the specification of the components the following must be provided about the system:

- Extract rate (expressed as  $\text{m}^3 \cdot \text{s}^{-1}$ ) at the proposed rate of extract
- Dwell time of the gases in any carbon filtration zone
- Volume of the kitchen; and
- Efflux velocity.

The system performance is dependant upon the extract rate of the exhaust air. Where the rate can be adjusted by the use of dampers or a variable speed fan, then the limitations this may place on filter dwell time must be described.

## 8. Flue & Fan Design

The height and velocity of the final discharge are the two important factors. Generally, the greater the flue height, the better the dispersion and dilution of odours. Also the longer the flue the more powerful the fan required to ensure effective efflux velocity.

The discharge of air should be at a minimum height of 1m above the eaves of the highest element of the relevant building. If there are higher buildings in close proximity that would affect effective dispersion the terminus of the flue may need to be even higher or have a veturis fitting at the terminus.

Where this is not possible (e.g. because of ownership or structural constraints), additional techniques will be required in order to reduce odours, such as an increase in efflux velocity and additional filters, etc. It is recommended that any site specific solution is discussed in advance of any formal planning application.

The final discharge should be vertically upwards, unimpeded by flue terminals. The number of bends in the ducting should be minimised and the ducting should have a smooth, cleanable internal surface.

## 9. Noise

Data on the noise levels produced by the proposed system should be provided including:

- Sound power levels or sound pressure levels at given distances (the assumptions to this calculation must be clearly stated);
- Octave band analysis
- Hours of operation of the ventilation system (this may differ from the hours of opening).

## 10. Maintenance

A schedule of maintenance must be provided including details for:

- Cleaning (ducts, hoods & filters)
- Frequency of inspection and filter replacement
- Inspection and servicing of fans; and
- If maintenance schedule is not based on manufacturer's instructions, include the reasons why.

## 11. Additional notes for guidance

- The air inlets must be fitted with insect or vermin screens to prevent pests entering the kitchen.
- Sufficient air must be permitted into the premises to replace extracted air. The locations of air intake should be detailed. The route of intake air into any kitchen must not pass through a WC. Separate provision must be made for ventilation of WCs
- There must be sufficient access points to permit adequate cleaning of all the ductwork

# Appendix D - Combustion Plant – Information Request Form

## Air Quality and Clean Air Act Approval

Any use of plant, which includes an element of combustion, is potentially a source of air pollution. Pollutants associated with combustion include Nitrogen Oxides (NO<sub>x</sub>) and depending on the fuel can also include particulate matter (PM<sub>10</sub> & PM<sub>2.5</sub>) and Sulphur Dioxide (SO<sub>2</sub>). These pollutant emissions can have an impact on local air quality and affect human health. It is essential that any new plant installed in Southwark meets certain emission control requirements in order to protect local air quality and health.

The whole of the Southwark has been declared a Smoke Control Area under the Clean Air Act 1993 and majority of Southwark (the area north of the south circular) has been declared an Air Quality Management Area.

In order to approve a planning application, that includes combustion plant, the following information must be supplied to the local authority.

More information on plant emission standards can be found in Appendix 7 of [the Sustainable Design and Construction Supplementary Planning Guidance](#)

### A. Development Details

- A1) Planning Application Reference .....
- A2) Name of Site .....
- .....
- A3) Address where boiler system(s) will be located.....
- .....
- .....
- A4) Person completing form .....
- A5) Position/Post.....
- A6) Contact telephone number & email .....
- A7) Date.....



**B. Particulars of the plant**

B1 Description of basic details of the plant

- a) Make .....
- b) Model .....
- c) Manufacturer .....
- d) Thermal Capacity (kW/MW) .....
- e) Electrical Capacity (kWe) .....
- f) Efficiency (%) .....
- g) Fuel(s) to be used.....
- h) Maximum rate of fuel consumption) ( $m^3.hr^{-1}$ ,  $kg.hr^{-1}$  or  $l.hr^{-1}$ ) .....

B2. Describe the plant combustion system and, if appropriate, the grate system.

.....

.....

.....

B3. Describe how combustion will be optimised and controlled in order to reduce emissions.

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.....

B4. Describe the fuel system.

.....

.....

B5. If a solid fuel is being used. Provide details of the abatement equipment in place for controlling particulate matter (fly ash) emissions

.....  
.....

B6. If a solid fuel is being used. If no abatement system for particulate matter is fitted, justify what plant design features are in place to effectively reduce particle emissions.

.....  
.....  
.....

B7. How does the plant deal with variable heat loads - is the plant linked to an accumulation tank.

.....  
.....  
.....

B8. Is the plant an exempt appliance in accordance with the Clean Air Act 1993? If yes provide evidence to demonstrate the plant has been tested and certified as an exempt appliance.

.....  
.....  
.....

**C. Plant Operation and Maintenance**

C1. Describe the arrangements for cleaning the plant and, if appropriate, de-ashing the plant.

.....  
.....  
.....  
.....

C2. Who will be responsible for operating and maintaining the plant?

.....  
.....  
.....

C3. Provide details of the maintenance schedule associated with the plant, abatement equipment and stack. This should include frequency of plant inspection and servicing by a competent engineer.

.....

.....

.....

C4. Describe how incidences of plant and/or abatement system failure are identified and Mitigated.

.....

.....

**D. Plant Stack Details**

D1. Identify the height of the boiler exhaust stack above ground. The effective height reached by the plume should be calculated using dispersion modelling software. Evidence shall be presented to demonstrate that predicted emission concentrations associated with the 'calculated' stack height do not have a significant impact on the air quality objectives for NO<sub>2</sub> and PM<sub>10</sub> / PM<sub>2.5</sub>.

- Air quality modelling shall be carried out in accordance with the procedures outlined in EPUK's '[Development Control: Planning for Air Quality](#)' and the [GLA Technical Guidance for LLAQM TG \(16\)](#) and with due regard to the [Mayor's Air Quality Strategy for London](#)
- The modelling work shall take into account variable emissions rates associated with the plant operating on full and partial load
- A report shall be submitted outlining the following:-
  - Details of the modelling software chosen
  - Stack internal diameter (m)
  - Does the stack terminated vertically and is the stack insulated
  - Present maximum NO emission rates (mg.m<sup>-3</sup> or g.hr<sup>-1</sup>) at standard reference conditions (6% oxygen, 273K, 101.3kPa). Provide emissions test data as evidence of emission rates from boiler. This shall reference the test method used to determine emission concentrations;
  - Identify the exhaust gas efflux velocity (m.s<sup>-1</sup>) and temperature (°C);
  - Is the plant exhaust stack fitted with draft fans with adjustable speed control?
  - Grid reference of the plant exhaust stack
  - Release and stack parameters used in the modelling exercise e.g. volumetric flow-rate (V), pollutant emission rates (g.s<sup>-1</sup>)

- Nearby building mass details
- Meteorological data
- Terrain and surface roughness
- Background levels of pollutants, and
- Methods used to combine background and source-contributed pollutant concentrations
- The predicted results of ambient pollutant concentration at specific receptors should be tabulated. This should include location of the receptor and distance from the stack. The location and OS grid reference for locations of maximum impact should also be identified.
- A full discussion of any potential breaches of air quality should be provided.
- This should also include a discussion of model sensitivity to key parameters inputted.

**E. Fuel details**

E1. Description of the fuel specification including origin, type of fuel, nitrogen, moisture, ash content (%) and mechanical durability.

.....

.....

.....

E2. Does the fuel comply with an European or equivalent fuel quality standards?

.....

E3. Describe what fuel quality control procedures will be adopted to guarantee constant fuel quality from your supplier.

.....

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.....

E4. Provide evidence to demonstrate that the plant combustion system is applicable to the fuel specification.

.....

.....

E5. Location and distance of fuel supplier(s) from site.

.....

E6. Identify where and how fuel will be stored on site (bunker, silo, hopper, etc.).

.....  
.....

E7. Fuel store capacity .....

E8. Will the fuel store be fitted with ventilation? Provide details.

.....  
.....

E9. Describe how fuel will be unloaded from the delivery vehicle into the storage facility and what, if any, control measures will be in place to reduce particulate matter emissions to atmosphere.

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.....

E10. Identify the type of fuel delivery vehicle and provide evidence to demonstrate that there is sufficient space for the fuel delivery vehicle to access, exit and manoeuvre the site.

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.....  
.....

**F Building Details**

F1. Distance of adjacent buildings from boiler exhaust stack. ....

.....

F2. Height of adjacent buildings from boiler exhaust stack. ....

.....

F3. Dimensions of building to which the boiler exhaust stack is attached. ....

.....

F4. Indicate the distance from the boiler exhaust stack to the nearest fan assisted intakes and/or openable windows, balconies, terraces, etc.

.....  
.....

## **G**    **Plans**

- G1. Provide a site plan showing the location of the boiler room, fuel storage area and the access and exit route for fuel delivery vehicles
- G2. Provide a site plan showing the position of the boiler exhaust stack, fan assisted intake air vents and nearest openable windows.

## **I**    **Submission of Form**

Return this form to [environmental.protection@southwark.gov.uk](mailto:environmental.protection@southwark.gov.uk)

# Appendix E - Glossary

|                                      |   |
|--------------------------------------|---|
| Air Quality Assessment (AQA)         | An assessment of the impact of a development on the levels of certain atmospheric pollutants in the local area.   |
| Air Quality Management Areas (AQMAs) | Areas where the air quality objectives are likely to be exceeded. Declared by way of an order issued under the Section 83(1) of the Environment Act 1995.   |
| Air Quality Objectives               | Air quality targets to be achieved as set out in the Air Quality Regulations 2000 and subsequent Regulations. Objectives are expressed as pollution concentrations over certain exposure periods. They should be achieved by a specific target date. Some objectives are based on long term exposure (e.g. annual averages), with some based on short term objectives. Objectives only apply where a member of the public may be exposed to pollution over the relevant averaging time. |
| Best Available Techniques (BAT)      | The basis for determining the appropriate technique for reducing pollution under the Prevention and Control of Pollution Regulations.   |
| Exceedence                           | Concentration of a specified air pollutant that is greater than the appropriate Air Quality Objective limit.  |
| LAQM.TG (16)                         | Local Air Quality Management Technical Guidance (2016). For all local authorities excluding the London Boroughs and the City of London on assessing air quality.  |
| LLAQM.TG (16)                        | London Local Air Quality Management Technical Guidance (2016). This document provides advice on how London Boroughs and the City of London should assess air quality.   |
| Mitigation                           | Mitigation measures minimise, but do not necessarily remove, the level of and/or impact or effect of pollutants on local air quality.   |
| National Air Quality Objectives      | See Air Quality Objectives.   |
| National Air Quality Strategy        | The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. (July 2007) produced by the UK Government.  |
| NO <sub>2</sub>                      | Nitrogen Dioxide  |

|  |  |
|--|--|
| NO <sub>x</sub>                          | Nitrogen oxides, includes nitric oxide and nitrogen dioxide. Most pollution sources emit nitrogen oxides primarily as nitric oxide. However, once in the atmosphere nitric oxide reacts and is converted to nitrogen dioxide. Therefore it is important to know the concentrations of both NO <sub>x</sub> and NO <sub>2</sub> . |
| Offsetting                               | Measures which 'compensate' for increases in pollution, but are not necessarily in the same locality.  |
| Objective Limit Values / EU limit values | The maximum pollutant levels set out in the EU Daughter Directives on Air Quality and national legislation. In some cases the limit values are the same but the national air quality objective may allow a different period for achieving it.  |
| PM <sub>10</sub>                         | Fine particulate matter with a diameter of less than 10 microns diameter i.e. breathable particles   |
| PM <sub>2.5</sub>                        | Fine particulate matter with a diameter of less than 2.5 microns diameter i.e. particles that will cross the barrier from the lungs into the bloodstream   |
| Part A1 and A2 Processes                 | Industrial processes which are regulated under the Pollution Prevention and Control (PPC) Regulations and subsequent Integrated Pollution Prevention and Control (IPPC) for emissions to atmosphere, land and water.   |
| Part B Processes                         | Industrial processes which are regulated under the Local Air Pollution Control (LAPC) and Local Air Quality Pollution Prevention and Control (LAPPC) Regulations for emissions to air only.  |
| Polluting development                    | A development which will directly or indirectly increase levels of atmospheric pollutants. This may include industrial processes but may also include developments which could cause increased traffic.  |
| PPC Regulations                          | Pollution Prevention and Control Regulations 2000 (as amended).  |
| Risk Assessments                         | A comprehensive assessment of the risks associated with a particular hazard.   |
| Sensitive development                    | The introduction of a development with a sensitive land use such as a new residential development, educational establishment, hospital hospice or care home, or a development close to an established sensitive use that would allow users of the site to potentially be exposed to more pollution.                              |



# Appendix F - Abbreviations

|                   |  |
|-------------------|--|
| AQAP              | Air Quality Action Plan  |
| AQMA              | Air Quality Management Area  |
| AQO               | Air Quality Objective  |
| AQTG              | Air Quality Technical Guidance   |
| BEB               | Buildings Emission Benchmark   |
| CAB               | Cleaner Air Borough  |
| CAZ               | Central Activity Zone  |
| COSHH             | Control of Substances Hazardous to Health                                  |
| ESP               | Electrostatic Precipitators  |
| EV                | Electric Vehicle   |
| GLA               | Greater London Authority   |
| HMIP              | Her Majesty Inspectorate for Pollution now known as the Environment Agency |
| IAQM              | Institute of Air Quality Management  |
| IPPC              | Integrated Pollution Prevention and Control                                |
| LAPC              | Local Air Pollution Control  |
| LAPPC             | Local Air Quality Pollution Prevention and Control                         |
| LAEI              | London Atmospheric Emissions Inventory                                     |
| LAQM              | Local Air Quality Management   |
| LLAQM             | London Local Air Quality Management  |
| NO <sub>2</sub>   | Nitrogen Dioxide   |
| NO <sub>x</sub>   | Oxides of Nitrogen   |
| NRMM              | Non-Road Mobile Machinery  |
| PM <sub>10</sub>  | Particulate matter less than 10 micron in diameter                         |
| PM <sub>2.5</sub> | Particulate matter less than 2.5 micron in diameter                        |
| PPC               | Pollution Prevention Control   |
| SPG               | Supplementary Planning Guidance  |
| TEB               | Transport Emissions Benchmark  |
| TfL               | Transport for London   |

# Appendix G – Checklist

To be included when the main document text has been finalised, because I would like to refer the reader to particular pages in the document for further information.

| Item to be included in the Air Quality Assessment | Included in the assessment<br>Yes / No | Air Quality Assessor's<br>Comments |
|---|--|------------------------------------|
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |
|   | Yes / No                               |                                    |

# NOTES

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