

## 2 Air quality

### KEY MESSAGES:

- All of Camden is a designated Air Quality Management Area due to the high concentrations of nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>).
- All developments are to limit their impact on local air quality.

2.1 Poor air quality can harm health and the environment. The Council aims to make sure that new development does not harm air quality. This guidance provides advice on how to address air quality issues in planning applications.

2.2 Camden Core Strategy policy CS16 - *Improving Camden's health and well-being* and policy DP32 – *Air quality and Camden's Clear Zone* of the Camden Development Policies sets out our approach to air quality in the borough.

2.3 *Planning Policy Statement PPS23: Planning and Pollution Control* contains the Government's core policies and principles on air quality and air pollution. The London Plan outlines regional policies related to protecting local air quality during the planning process.



### Air quality in Camden

2.4 An Air Quality Management Area (AQMA) must be declared by the local authority for an area that is unlikely to meet the national air quality targets for specific air pollutants. The authority then produces a Local Air Quality Action Plan. See Camden's website for our air quality plan.

2.5 The whole of Camden is an Air Quality Management Area (AQMA) as it does not meet national air quality targets for nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>). The main sources of air pollution in Camden are road transport and gas boilers. The Council's Air Quality Action Plan outlines measures to reduce emissions from the key sources of air pollution in the borough. Included in the plan are measures to minimise and control NO<sub>x</sub> and PM<sub>10</sub> emissions associated with new developments both during the construction of a building and its future use.

2.6 Air quality is particularly poor in the south of borough which is characterised by high levels of traffic. We will only grant planning permission for development that significantly increases travel demand in

the south of the borough where it includes appropriate measures to minimise the transport impact of development.

- 2.7 Where appropriate we will seek developments to include monitoring equipment to allow us to better understand local air quality.

#### **WHAT DOES THE COUNCIL REQUIRE?**

The Council's overarching aim is for new development is to be 'air quality neutral' and not lead to further deterioration of existing poor air quality.

You will be required to include mitigation and offsetting measures to deal with any negative air quality impacts associated with your development proposals. At the same time your development should be designed to minimise exposure of occupants to existing poor air quality.

To manage and prevent further deterioration of air quality in Camden, we will require an air quality assessment with planning applications for development that could have a significant negative impact in air quality. This impact can arise during both the construction and operational stages of a development as a result of increased NO<sub>x</sub> and PM<sub>10</sub> emissions.

- 2.8 An air quality assessment will also be required for a proposal if it introduces uses that are susceptible to poor air quality, such as housing or a school, into areas of particularly poor air quality.
- 2.9 The Council will not grant planning permission for developments that could significantly harm air quality or introduce people into areas of elevated pollution concentrations, unless mitigation measures are adopted to reduce the impact to acceptable levels and protect public exposure (see paragraph 32.4 of policy DP32 of the Camden Development Policies).
- 2.10 Although all of Camden is covered by an AQMA we will only require an air quality assessments where development could potentially cause significant harm to air quality as set out in the table below.

**An Air Quality Assessment is required in 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 floorspace 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, in particular developments located on busy roads;
- involving the following - biomass boilers, biomass or gas combined heat and power (CHP);
- involving industrial or commercial floorspace regulation under the Environmental Permitting (England and Wales) Regulations (EPR) which will be subject to Environmental Assessment under the Town and Country Planning (Environmental Impact Assessment) Regulations 1999.

**What should an air quality assessment cover?**

- 2.11 Air quality assessments for developments potentially contributing to poor air quality are to include the following:
- a) An inventory of the PM<sub>10</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.
  - b) The application of atmospheric dispersion modelling to predicted existing and future NO<sub>2</sub> and PM<sub>10</sub> concentrations, both with and without the proposed development. Dispersion modelling shall be carried out in accordance with Air Quality and Planning Guidance, London Councils (2007) and Technical Guidance Note (TG09). (Specific guidance for modelling combustion plant emissions can be obtained from the Council's Sustainability Team – see Useful Contacts at the end of this section).
  - c) An assessment of the significance of air quality impacts during both the construction and operational phases. Reference shall be made to the Environmental Protection UK Guidance Note: Development Control: Planning for Air Quality (2010 Update).
  - d) Consideration of the potential cumulative impacts on air quality which may arise during the construction or operational phases as a result of emissions arising from other developments within a 100m radius of the development.
  - e) Where a biomass boiler or combined heat and power (CHP)/combined cooling, heating and power (CCHP) will be used for

on site energy generation, you are to complete the Council's Air Quality Information Request Form. This requires specific technical details related to the appliance, fuel type, emission concentrations, maintenance and exhaust stack. The forms can be obtained from Camden's Air Quality Officer or the Council's air quality webpage under Environment.

- f) Applications which include biomass boilers or biomass CHP, the air quality assessment shall compare the impact of emissions from the intended biomass boiler/CHP and a gas boiler/CHP of identical thermal rating.
- g) An indication of the number of new occupiers and users of the site who will be exposed to poor air quality as a result of the development (the occupiers/users should also be shown on a map). For further information please refer to the Environmental Protection UK Guidance Note: Development Control: Planning For Air Quality (2010 Update).
- h) An assessment of the impacts on air quality of the demolition and construction phase and details of mitigation methods for controlling dust and emissions from plant and machinery. Reference should be made to the Best Practice Guidance: The control of dust and emissions at construction and demolition, London Councils (2006).
- i) An outline of, and justification for, mitigation measures associated with the design, location and operation of the development in order to reduce air pollution and exposure to poor air quality.

#### **Developments containing sensitive uses**

- 2.12 Developments which will not result in additional NO<sub>x</sub> and/or PM<sub>10</sub> emissions and present no risk in worsening air quality, but introduce new sensitive uses to an area which breaches the air quality standards for NO<sub>2</sub> or PM<sub>10</sub> need to submit an assessment of the local air quality but can omit requirements B, D and E above.

#### **What measures can reduce air pollution emissions and protect public exposure?**

- 2.13 Various actions can be taken to mitigate air pollution emissions arising from the construction and operational phases of a new development. Additional actions can be adopted to curtail public exposure in areas where air pollution levels are particularly high. These should be taken into account during the design stage of an application. The key measures are detailed below:

#### **Demolition and construction**

- 2.14 The impact of the construction and demolition phases of a development on air quality must be taken into account as part of your planning application. Exhaust



emissions from construction vehicles and machinery such as generators, piling and grinding equipment can result in:

- dust emissions;
- gases (NO<sub>x</sub>); and
- fine particles.

2.15 Controlling dust emissions is important to:

- prevent disturbance to local residents due to soiling;
- minimise damage to vegetation; and
- reduce impacts on local PM<sub>10</sub> concentrations, thereby protecting public health.

2.16 We may require PM<sub>10</sub> monitoring, before and during the construction and demolition phase, dependant upon the scale of the proposed development.

2.17 We will encourage best practice measures to be adopted during construction and demolition work to reduce and mitigate air pollution emissions. You will be encouraged to adopt the procedures outlined in the London Council's best practice guidance *The control of dust and emissions from construction and demolition*. These focus around three principles to control emissions – prevention, suppression and containment. We will expect you to include the following items in construction management plans:

- Identification of whether demolition/construction represents a low, medium or high risk site in the context of air quality.
- Identification of the best practice measure required to control and mitigate plant and vehicles exhaust emissions.  
(See section 8 of this Guidance on Construction management plans for further details).

**Distance of impacts**

Depending of the size, location and characteristics of your development, impacts from demolition and construction phases can occur at distance of 10 to 500m.

**Building location and design**

2.18 The location of a development has a direct influence on exposure to elevated air pollution levels. This is particular relevant where developments include sensitive uses such as hospitals, schools and children's playgrounds. Suitable building design, layout and orientation can avoid increasing exposure whilst minimising energy demand and energy loss. The Council requires the impact of outdoor air pollution on indoor air quality in new developments to be taken into account at the earliest stages of building design.

- 2.19 The location of outside space is also an important consideration and any exposure of gardens and roof terraces should be screened and, where practicable, minimised through appropriate positioning and orientation. You should take care not to locate flues and exhaust vents in close proximity to recreational areas such as roof terraces or gardens. An energy efficient building design can minimise air pollution resulting from the use of gas boilers. Adopting sustainable building design (e.g. the Code for Sustainable Homes and the Building Research Establishment Environmental Assessment Method (BREEAM)), will reduce thermal heat losses and result in less gas use leading to lower NO<sub>x</sub> emissions. See Camden Planning Guidance 3 – Sustainability for further details on the Code and BREEAM.

### Gas boilers

- 2.20 Gas boilers are a large source of NO<sub>x</sub> emissions in Camden. In order to minimise NO<sub>x</sub> emissions arising from heating and hot water systems the Council requires boilers fitted in new development to achieve a NO<sub>x</sub> emissions of <40 mg/m<sup>3</sup> and an energy efficiency rating >90%.

### Renewable Energy and Combined Heat and Power

- 2.21 Core Strategy policy CS13 promotes the use of renewable energy technologies to reduce carbon emissions and tackle climate change. The adoption of renewable energy and energy efficiency technologies in major developments can minimise air pollution emissions through reductions in gas consumption required for heating and hot water. These include solar thermal collectors and ground source heat pumps in addition to gas and hydrogen fuel cell combined heat and power (CHP) or combined cooling heat and power (CCHP).

#### Hydrogen fuel cell

A fuel cell is an electrochemical cell that converts energy from a fuel (hydrogen) into electricity.

- 2.22 Biomass boilers however can give rise to higher emissions of NO<sub>x</sub> and PM<sub>10</sub> emissions than conventional gas boilers. Permission to operate these appliances will only be granted if the air quality impacts are demonstrated to be equivalent or lower than those associated with a conventional gas boiler of similar thermal rating. Where an assessment demonstrates adverse effects on air quality, this type of biomass boiler should not be used in the development.
- 2.23 You are advised to refer to the national guidance note *Biomass and Air Quality Guidance Note for Local Authorities*, published by Environmental Protection UK. In cases where emissions released from a biomass boiler do not lead to negative impacts on air quality, the



appliance will be required to meet high standards of air pollution control with particular emphasis given to:

- boiler design and operation;
- pollution abatement equipment;
- servicing and maintenance;
- fuel quality, storage and delivery; and
- exhaust stack height.

2.24 We will require evidence that the exhaust stack height of gas CHP/CCHP has been appropriately calculated to guarantee that NO<sub>x</sub> emissions are effectively dispersed, and do not risk increasing ground level NO<sub>2</sub> concentrations. An air quality assessment will be required for developments including CHP/CCHP. Where the assessment reveals a negative impact on air quality, mitigation measures will be required entailing the best available techniques to reduce emissions. This includes the installation of NO<sub>x</sub> abatement technology such as:

- use of low NO<sub>x</sub> burners; or
- increasing stack height.

2.25 A programme of on-going maintenance and servicing will be necessary to minimise gas emissions released from CHP/CCHP.

2.26 The Council will use Section 106 obligations to set requirements for controlling emissions from biomass boilers and CHP/CCHP.

### **Traffic Reduction**

2.27 Reducing car usage caused by new developments is the principle way to minimise vehicle emissions and protect local air quality. Please refer to transport policy *CS11 - Promoting sustainable and efficient travel* in the Camden Core Strategy for more on our approach to improving air quality through transport measures. This requires:

- the adoption of car free and car capped developments;
- provision cycling facilities to encourage sustainable transport;
- green travel plans;
- provision of car club bays; and
- infrastructure for low emissions vehicles such as electric vehicle recharging points.

### Further information

Planning Guidance	<ul style="list-style-type: none"> <li>• Planning Policy Statement 23: Planning and Pollution Control (2004)</li> <li>• Planning Policy Statement 23 Annex 1: Pollution Control, Air and Water Quality These documents outline the government's advice on methods of planning for pollution control.</li> </ul>
Air Quality Guidance	<ul style="list-style-type: none"> <li>• Technical Guidance Note: Assessment of Air Quality Issues of Planning Applications, Association of London Government (ALG), 2006 This provides technical advice on how to deal with planning applications that could have an impact on air quality.</li> <li>• Development Control: Planning for Air Quality. Environmental Protection UK, 2010 This advises of the significance of air quality assessments within the planning process.</li> <li>• Best Practice Guidance - The control of dust and emissions from construction and demolition (London Councils) 2006 The aim of this guidance is to protect the health of on-site workers and the public and to provide London-wide consistency for developers.</li> <li>• Biomass and Air Quality Guidance for Local Authorities (Environmental Protection UK) 2009 This guidance details procedures for assessing and managing the effects of biomass on air quality and provides background material.</li> <li>• Low Emission Strategies (Beacon Low Emission Group) 2009 This provides advice on how to reduce emissions of air pollutants and greenhouse gases from transport.</li> </ul>
Useful Contacts	<p>Camden Council Corporate Sustainability Team  <a href="http://www.camden.gov.uk/smallsteps">www.camden.gov.uk/smallsteps</a> (020 7974 4444)          provides guidance on air quality in Camden</p>