

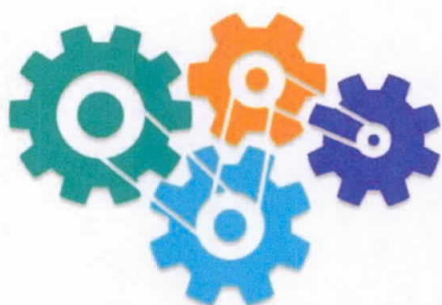


11 OCT 2017

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## Air Quality Assessment

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Manor  
Court,  
Hillingdon,  
London

August 2017

Ref: 16-2140

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|               |                                                   |
|---------------|---------------------------------------------------|
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## 1. Introduction

### Background

This report has been prepared to support the planning application for a residential development on land at Manor Court, Hillingdon.

The proposed development has the potential to expose future residents to elevated pollution levels. As such, an Air Quality Assessment was required in order to determine baseline conditions at the site and consider its suitability for the proposed end-use.

### Site Location and Context

The site is located on land at Manor Court, Hillingdon, London, at approximate National Grid Reference (NGR): 505634, 177858. Reference should be made to Figure 1 for a map of the site and surrounding area.

The proposals comprise the redevelopment of the existing buildings at Manor Court to provide 15 residential dwellings with 30 car parking spaces, cycle parking and associated infrastructure.

The London Borough of Hillingdon (LBoH) has declared an Air Quality Management Area (AQMA) within its administrative extents due to exceedences of the annual mean Air Quality Objective (AQO) for nitrogen dioxide (NO<sub>2</sub>). The development is located within the AQMA. Subsequently, there are concerns that the proposals will introduce future occupants to exceedences of the relevant AQOs. As such, concentrations at the site have been assessed in the following report in order to consider location suitability for the proposed end-use and define any requirement for mitigation. Potential impacts associated with emissions from the scheme have also been considered as necessary.

## 2. Legislation and Policy

### European Directives

European Union (EU) air quality legislation is provided within Directive 2008/50/EC, which came into force on 11<sup>th</sup> June 2008. This Directive consolidated previous legislation which was designed to deal with specific pollutants in a consistent manner and provided new Air Quality Limit Values (AQLVs) for particulate matter with an aerodynamic diameter of less than 2.5µm. The consolidated Directives include:

- Directive 1999/30/EC - the First Air Quality "Daughter" Directive - sets ambient AQLVs for NO<sub>2</sub>, oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide, lead and particulate matter with an aerodynamic diameter of less than 10µm (PM<sub>10</sub>);
- Directive 2000/69/EC - the Second Air Quality "Daughter" Directive - sets ambient AQLVs for benzene and carbon monoxide; and,
- Directive 2002/3/EC - the Third Air Quality "Daughter" Directive - seeks to establish long-term objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

The fourth daughter Directive was not included within the consolidation and is described as:

- Directive 2004/107/EC - sets health-based limits on polycyclic aromatic hydrocarbons, cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable.

### UK Legislation

The Air Quality Standards Regulations (2010) came into force on 11<sup>th</sup> June 2010 and transpose EU Directive 2008/50/EC into UK law. AQLVs were published in these regulations for 7 pollutants, as well as Target Values for an additional 5 pollutants.

Part IV of the Environment Act (1995) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007<sup>1</sup>. The AQS sets out AQOs that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedences over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.

Table 1 presents the AQOs for pollutants considered within this assessment.

Table 1 Air Quality Objectives

| Pollutant        | Air Quality Objective                      |                                                                      |
|------------------|--------------------------------------------|----------------------------------------------------------------------|
|                  | Concentration ( $\mu\text{g}/\text{m}^3$ ) | Averaging Period                                                     |
| NO <sub>2</sub>  | 40                                         | Annual mean                                                          |
|                  | 200                                        | 1-hour mean, not to be exceeded on more than 18 occasions per annum  |
| PM <sub>10</sub> | 40                                         | Annual mean                                                          |
|                  | 50                                         | 24-hour mean, not to be exceeded on more than 35 occasions per annum |

Table 2 summarises the advice provided in the Greater London Authority (GLA) guidance<sup>2</sup> on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

| Averaging Period | Objective Should Apply At                                                                                                                                                                                                                                                                                                                                                                                                      | Objective Should Not Apply At                                                                                                                                                                                                                                                                                                                                             |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Annual mean      | All locations where members of the public might be regularly exposed<br><br>Building façades of residential properties, schools, hospitals, care homes etc.                                                                                                                                                                                                                                                                    | Building façades of offices or other places of work where members of the public do not have regular access<br><br>Hotels, unless people live there as their permanent residence<br><br>Gardens of residential properties<br><br>Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term |
| 24-hour mean     | All locations where the annual mean objective would apply, together with hotels<br><br>Gardens of residential properties                                                                                                                                                                                                                                                                                                       | Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term                                                                                                                                                                                                                                 |
| 1-hour mean      | All locations where the annual mean and 24 and 8-hour mean objectives apply.<br>Kerbside sites (for example, pavements of busy shopping streets)<br><br>Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more<br><br>Any outdoor locations where members of the public might reasonably be expected | Kerbside sites where the public would not be expected to have regular access                                                                                                                                                                                                                                                                                              |

<sup>2</sup>

London Local Air Quality Management (TG16), Technical Guidance 2016 (LLAQM.TG (2016)), GLA,

| Averaging Period | Objective Should Apply At   | Objective Should Not Apply At |
|------------------|-----------------------------|-------------------------------|
|                  | to spend one hour or longer |                               |

### Local Air Quality Management

Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, are likely to be exceeded, the LA is required to declare an AQMA. For each AQMA the LA is required to produce an Air Quality Action Plan, the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

### National Planning Policy

The National Planning Policy Framework<sup>3</sup> (NPPF) was published on 27<sup>th</sup> March 2012 and sets out the Government's core policies and principles with respect to land use planning, including air quality. The document includes the following considerations which are relevant to the proposed development:

*"The planning system should contribute to and enhance the natural and local environment by: [...]"*

*Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability"*

*"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 implications of the NPPF have been considered throughout this assessment.

### National Planning Practice Guidance

The National Planning Practice Guidance<sup>4</sup> (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6<sup>th</sup> March 2014 to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

1. Why should planning be concerned about air quality?
2. What is the role of Local Plans with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality be relevant to a planning decision?
6. Where to start if bringing forward a proposal where air quality could be a concern?

<sup>3</sup> NPPF, Department for Communities and Local Government, 2012.

7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?
9. How do considerations about air quality fit into the development management process?

These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

## Local Planning Policy

### The London Plan

The London Plan March 2016<sup>5</sup> was published by the GLA and along with the adopted alterations, sets out a fully integrated economic, environmental, transport and social framework for the development of the capital to 2031. London boroughs' local plans need to be in general conformity with the London Plan, and its policies guide decisions on planning applications by councils and the Mayor.

The London Plan policies relating to air quality are outlined below:

#### *"Policy 5.3 - Sustainable design and construction*

##### *Strategic*

- A. *The highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime.*

##### *Planning decisions*

- B. *Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process.*
- C. *Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles:*

*[...]*

*d) minimising pollution (including noise, air and urban run-off)*

*[...]"*

#### *"Policy 7.14 - Improving air quality*

##### *Strategic*

- A. *The Mayor recognises the importance of tackling air pollution and improving air quality to London's development and the health and well-being of its people. He will work with strategic partners to ensure that the spatial, climate change, transport and design policies of this plan support implementation of his Air Quality and Transport strategies to achieve reductions in pollutant emissions and minimise public exposure to pollution.*

#### Planning decisions

- B. *Development proposals should:*

- a) minimise increased exposure to existing poor air quality and make provision to address local problems of air quality (particularly within AQMAs) and where development is likely to be used by large numbers of those particularly vulnerable to poor air quality, such as children or older people) such as by design solutions, buffer zones or steps to promote greater use of sustainable transport modes through travel plans (see Policy 6.3)*
- b) promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance in the GLA and London Councils' 'The control of dust and emissions from construction and demolition'*
- c) be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as AQMAs).*
- d) ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, and that it is possible to put in place measures having clearly demonstrated equivalent air quality benefits, planning obligations or planning conditions should be used as appropriate to ensure this, whether on a scheme by scheme basis or through joint area-based approaches*
- e) where the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations. Permission should only be granted if no adverse air quality impacts from the biomass boiler are identified [...]"*

The requirements of these policies have been considered throughout the Air Quality Assessment.

#### Local Development Framework

LBoH's Local Plan: Part 1 Strategic Policies<sup>6</sup> comprises a spatial vision, strategic objectives, a spatial strategy, core policies and a monitoring and implementations framework with clear objectives for achieving delivery. It was adopted in November 2012 and sets out the overall level and broad locations of growth up to 2026.

A review of the Local Plan: Part 1 indicated the following policies in relation to air quality that are relevant to this assessment:

*"BE1 - Built Environment*

*All new developments should:*

[...]

10. Maximise the opportunities for all new homes to contribute to tackling and adapting to climate change and reducing emissions of local air quality pollutants."

"EM8: Land, Water, Air and Noise

[...]

All developments should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.

All major development within the AQMA should demonstrate air quality neutrality (no worsening impacts) where appropriate; actively contribute to the promotion of sustainable transport measures such as vehicle charging points and the increased provision for vehicles with cleaner transport fuels; deliver increased planting through soft landscaping and living walls and roofs; and provide a management plan for ensuring air quality impacts can be kept to a minimum.

The council seeks to reduce the levels of pollutants referred to in the Government's National Air Quality Strategy and will have regard to the Mayor's Air Quality Strategy.

London Boroughs should also take account of the findings of the Air Quality Review and Assessments and Actions plans, in particular where AQMAs have been designated.

The Council has a network of Air Quality Monitoring stations but recognises that this can be widened to improve understanding of air quality impacts. The Council may therefore require new major development in an AQMA to fund additional air quality monitoring stations to assist in managing air quality improvements."

These policies were considered as necessary throughout the assessment.

A review of the Local Plan: Part 2 Development Management Policies<sup>7</sup>, adopted in October 2015, indicated the following policy in relation to air quality of relevance to the assessment:

"Policy DME1 14: Air Quality

- A) Development proposals should demonstrate appropriate reductions in emissions to sustain compliance with and contribute towards meeting EU limit values and national air quality objectives for pollutants.
- B) Development proposals should, as a minimum:
  - i) be at least "air quality neutral";
  - ii) include sufficient mitigation to ensure there is no unacceptable risk from air pollution to sensitive receptors, both existing and new; and
  - iii) actively contribute towards the continued improvement of air quality, especially within the Air Quality Management Area."

"Policy DMT 1: Managing Transport Impacts

A) Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner. In order for developments to be acceptable they are required to:

[...]

v) have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road networks.

[...]"

"Policy DMT 2: Highways Impacts

Development proposals must ensure that:

[...]

ii) they do not contribute to the deterioration of air quality, noise or local amenity or safety of all road users and residents;

[...]"

These policies were also considered as necessary throughout the assessment.

### 3. Baseline

Existing air quality conditions in the vicinity of the proposed development site were identified in order to provide a baseline for assessment. These are detailed in the following Sections.

#### Local Air Quality Management

As required by the Environment Act (1995), LBoH has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO<sub>2</sub> are above the AQOs within the borough. As such, one AQMA has been declared, which is described as:

*"The area from the southern boundary north to the border defined by, the A40 corridor from the western borough boundary, east to the intersection with the Yeading Brook north until its intersection with the Chiltern-Marylebone railway line."*

The proposed development is located within the AQMA. As such, there is the potential for the site to be affected by elevated pollutant concentrations and any emissions from the proposals to impact on this sensitive area. These issues have therefore been considered throughout the assessment.

LBoH has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs. As such, no further AQMAs have been designated.

#### Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by LBoH throughout their area of jurisdiction. Recent NO<sub>2</sub> results recorded in the vicinity of the development are shown in Table 3. Exceedences of the relevant AQO are shown in **bold**.

Table 3 Monitoring Results - NO<sub>2</sub>

| Monitoring Site |                                    | Monitored NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) |             |             |
|-----------------|------------------------------------|--------------------------------------------------------------|-------------|-------------|
|                 |                                    | 2014                                                         | 2015        | 2016        |
| HD 200          | 49 Zealand Avenue                  | <b>40.8</b>                                                  | 35.2        | 29.4        |
| HIL 1           | London Harmondsworth               | 29.2                                                         | 28.0        | 27.0        |
| HD 60           | Harmondsworth Green, Harmondsworth | 31.9                                                         | 26.8        | 24.2        |
| HD 65           | 28 Pinglestone Close, Sipson       | 34.1                                                         | 29.9        | 26.7        |
| T55             | Heathrow Green Gates               | 35.1                                                         | 32.2        | 34.0        |
| HD 59           | Bomber Close, Sipson               | 33.6                                                         | 29.1        | 30.3        |
| SIPS            | Hillingdon Sipson                  | 36.6                                                         | 33.7        | 36.0        |
| HD 31           | AURN Site, Keats Way, West Drayton | <b>47.3</b>                                                  | <b>41.1</b> | 34.3        |
| HIL             | London Hillingdon                  | <b>57.5</b>                                                  | <b>51.9</b> | <b>52.0</b> |

As shown in Table 3, the annual mean AQO for NO<sub>2</sub> was exceeded at several monitors in recent years. As the sites are located within an AQMA, elevated levels would be expected.

Recent PM<sub>10</sub> results recorded in the vicinity of the site are shown in Table 4.

**Table 4 Monitoring Results - PM<sub>10</sub>**

| Monitoring Site |                             | Monitored PM <sub>10</sub> Concentration (µg/m <sup>3</sup> ) |      |      |
|-----------------|-----------------------------|---------------------------------------------------------------|------|------|
|                 |                             | 2014                                                          | 2015 | 2016 |
| HIL 1           | London Harmondsworth        | 21.0                                                          | 22.0 | 23.0 |
| HIL 4           | London Harmondsworth Osiris | 12.1                                                          | 17.0 | 16.0 |
| T55             | Heathrow Green Gates        | 17.0                                                          | 14.0 | 14.0 |

As shown in Table 4, annual mean PM<sub>10</sub> concentrations were below the AQO at all monitoring locations between 2014 and 2016.

Reference should be made to Figure 2 for a map of the survey positions.

### Background Pollutant Concentrations

Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in grid square NGR: 505500, 177500. Data for this location was downloaded from the DEFRA website for the purpose of this assessment and is summarised in Table 5.

**Table 5 Background Pollutant Concentrations**

| Pollutant        | Predicted Background Concentration (µg/m <sup>3</sup> ) |       |       |
|------------------|---------------------------------------------------------|-------|-------|
|                  | 2016                                                    | 2017  | 2019  |
| NO <sub>2</sub>  | 29.47                                                   | 28.44 | 26.39 |
| PM <sub>10</sub> | 17.84                                                   | 17.62 | 17.18 |

As shown in Table 5, the predicted background concentrations are below the relevant AQOs at the development site.