11. AIR QUALITY

Introduction

11.1 This chapter of the ES assesses the likely significant effects of the Development on the environment in respect of Air Quality.

Policy Context

National Planning Policy Framework[i]

11.2 The National Planning Policy Framework (NPPF, 2019) underlines the importance of local authorities contributing towards improving and protecting the environment. The legislation points towards the need to focus on the enhancement of biodiversity, minimising waste and pollution, and mitigation/adaptation to climate change.

11.3 With particular regard to air quality management, Section 9 of the NPPF notes that the environmental impact of transport and traffic should be identified and assessed, whilst mitigating adverse effects to bring about net environmental gains. The guidance states that the planning system should actively manage patterns of growth, offering a choice of transport modes to reduce air pollution:

> *'Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.'*

11.4 Further to this, Section 15 of the NPPF notes that planning policies should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas (AQMAs) and Clean Air Zones (CAZ), and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Additionally, the NPPF states that planning decisions should ensure that any new development in AQMAs and CAZs is consistent with the local air quality action plan.

Planning Practice Guidance[ii]

11.5 Planning Practice Guidance (NPPG) provides guiding principles on how the planning process can take account of the impact of new development on air quality. Guidance outlines when air quality considerations could be relevant to the development management process. The NPPG states:

> *'Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.*
>
> *Where air quality is a relevant consideration the local planning authority may need to establish:*
>
> - *The 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
> - *Whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
> - *Whether occupiers or users of the development could experience poor living conditions or health due to poor air quality.'*

11.6 Paragraph 006 (Reference ID: 33-006-20191101) of the National Planning Practice air quality guidance outlines the specific issues that may need to be considered. Relevant considerations include when a development would:

> - *'Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*
> - *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a* Smoke Control Area*; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;*

- *Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;*
- *Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations; and*
- *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value.'*

11.7 The National Planning Policy air quality guidance also provides detail on how air quality impacts can be mitigated, stating that mitigation should be spatially specific, dependent on the proposed development, and proportionate to the likely impact. The following examples of mitigation are given in paragraph 008 (reference ID: 32-008-20191101):

- *'Maintaining adequate separation distances between sources of air pollution and receptors;*
- *Using green infrastructure, in particular trees, where this can create a barrier or maintain separation between sources of pollution and receptors;*
- *Appropriate means of filtration and ventilation;*
- *Including infrastructure to promote modes of transport with a low impact on air quality (such as electric vehicle charging points);*
- *Controlling dust and emissions from construction, operation and demolition; and*
- *Contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development.'*

Regional Planning Policy

The London Plan (GLA, 2016)[iii]

11.8 The London Plan (GLA, 2016) is a strategic regional planning policy document developed by the Mayor of London. Policy 7.14 deals with improving air quality, and states that London Boroughs should seek reductions in levels of pollutants referred to in the Government's national Air Quality Strategy (AQS) having regard to the Mayor's Air Quality Strategy (MAQS).

11.9 The Mayor has a legal responsibility to prepare and keep under review an air quality strategy for Greater London (GLA, 2010). Under the Greater London Authority Act, the Mayor is required to include in the strategy policies and proposals which help implement the National AQS in Greater London, and help achieve standards and objectives as outlined in the national strategy. The MAQS underlines a number of measures, broken down into transport or non-transport, which aim to improve air quality by achieving EU air quality limit values, and subsequently UK air quality objectives as soon as possible.

Intent to Publish London Plan (GLA, Consolidated changes version July 2019)[iv]

11.10 Following consultation and public examination, the new draft London plan has been informally agreed with both the Ministry of Housing, Communities & Local Government and the Secretary of State. The plan is to be published by the end of 2020 and is a material consideration in determining applications. The new and revised plan is being developed to provide a new approach to future development and sustainable, inclusive growth of London.

11.11 A number of policies relating to air quality improvement have been proposed as part of the new London Plan:

Policy SI1 (Improving air quality)

11.12 Development plans, through relevant strategic, site specific and area-based policies should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's Boroughs activities to improve air quality.

11.13 To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

1) Development proposals should not:
   - Lead to further deterioration of existing poor air quality;
   - Create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits;
   - Create unacceptable risk of high levels of exposure to poor air quality.

2) In order to meet the requirements in Part 1, as a minimum:
   - Development proposals must be at least air quality neutral
   - Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provisions to address local problems of air quality in preference to post design or retro fitted mitigation measures
   - Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1
   - Development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people, which do not demonstrate that design measures have been used to minimise exposure should be refused.

11.14 Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach through the new development. To achieve this a statement should be submitted demonstrating:

a. How proposals have considered ways to maximise benefits to local air quality; and
b. What measures or design features will be put in place to reduce exposure to pollution and how they will achieve this.

11.15 In order to reduce the impact on air quality during the constructions and demolition phase, development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.

11.16 Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development.

11.17 With reference to point 3 of Policy SI1, it should be noted that there is currently no guidance available to help assessors determine the most appropriate measures to achieve an Air Quality Positive development. However, in "A City for all Londoners"[v] the Mayor of London proposes the adoption of an Air Quality Positive policy that would ensure that new buildings actively contribute to the reduction of emissions to pollutants and any associated exposure. This policy is currently under consideration.

Policy SI2 (Minimising greenhouse gas emissions)

11.18 Major developments should be net zero-carbon. This means reducing greenhouse gas emissions in operation, and minimising both annual and peak energy demand in accordance with the following energy hierarchy:

- Be lean: use less energy and manage demand during operation;
- Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly;

- Be green: maximise opportunities for renewable energy by producing, storing, and using renewable energy on-site; and
- Be seen; monitor, verify and report on energy performance.

11.19 Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.

11.20 A minimum on-site reduction of at least 35% beyond Building Regulations is required for major development. Residential development should achieve 10%, and non-residential development should achieve 15% through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:

- Through a cash in lieu contribution to the borough's carbon offset fund; or
- Off-site provided that an alternative proposal is identified and delivery is certain.

Policy SI3 (Energy infrastructure)

11.21 Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system.

11.22 The heat source for the communal heating system should be selected in accordance with the following heating hierarchy:

a. Connect to local existing or planned heat networks;
b. Use zero emission or local secondary heat sources (in conjunction with heat pump, if required);
c. Use low emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area wide heat network, meet the developments electricity demand and provide demand response to local electricity networks); and
d. Use ultra-low NOx gas boilers.

11.23 CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements of Policy SI1 Part B.

11.24 Where a heat network is planned but not yet in existence the development should be designed to allow for the cost effective connection at a later date.

Sustainable Design and Construction Supplementary Planning Guidance

11.25 Sustainable Design and Construction Supplementary Planning Guidance (SPG, 2014)[vi] published by the Mayor of London, provides guidance to developers and local authorities on measures which can be taken in order to achieve sustainable development, aligned with objectives set out in the London Plan. Section 4.3 of the SPG is related to air quality and highlights the Mayor's priorities:

- Developers are to design their schemes so that they are, at a minimum, 'air quality neutral';
- Developments should be designed to minimise the generation of air pollution;
- Developments should be designed to minimise and mitigate against increased exposure to poor air quality;
- Developers should select a plant that meets the standards for emissions from combined heat and power and biomass plants; and
- Developers and contractors should follow the guidance set out in the document 'The Control of Dust and Emissions during Construction and Demolition SPG' when constructing their development.

London Environment Strategy (GLA, 2018)[vii]

11.26 The London Environment Strategy is a strategic planning policy document developed by the Mayor of London. The strategy aims to tackle the environmental pressures associated with an ever growing London populace. With particular regard to air quality, the policies that are set out in the London Environmental Strategy aim to achieve the best air quality of any major world city by 2050; requiring the following primary actions:

- Reducing exposure of Londoners to harmful pollution across London – especially at priority locations like schools – and tackling health inequality;
- Achieving legal compliance with UK and EU limits as soon as possible, including by mobilising action from the London boroughs, government, and other partners; and
- Establishing and achieving new, tighter air quality targets for a cleaner London, meeting World Health Organisation (WHO) health-based guidelines by 2030 by transitioning to a zero emission London.

Local Planning Policy

London Borough of Hounslow Local Plan[viii]

11.27 The London Borough of Hounslow's (LBH) Local Plan is a core document that shapes the

future spatial strategy of the borough, it sets out the proposals for future development over the next 15 years. The plan was adopted in September 2015 and is split into 11 categories the most pertinent to Air Quality being Chapter 9: Environmental Quality. Air Quality has seen additional emphasis in this Local Plan when compared to previous iterations of plans within Hounslow.

11.28 Policy EQ4: Air Quality, sets out the air quality objectives of the borough, how they will be achieved and the expectations set on developers:

- LBH seek to reduce potential air quality impacts and improve air quality within the borough in line with their Air Quality Action Plan.
- This will be achieved by;
  - Assessing air quality impacts of development proposals;
  - Encouraging air quality sensitive developments to be located in appropriate places; and
  - Ensuring development do not worsen air quality and, where possible improve it.
- Developments are expected to;
  - Carry out air quality assessments where major developments or changing use of an area to an air quality sensitive use, consider impacts of pollution on neighbouring receptors and in the vicinity of the site and the potential for end users to be exposed to air pollution as per the London Plan and Air Quality SPD; and
  - Incorporate mitigation measures where appropriate.

11.29 Further policies that will have indirect impacts on air quality include;

- CC2 Urban Design and Architecture, which outlines the expectation that all planning proposals should be designed to mitigate noise and air quality issues which significantly affect parts of the borough; and
- EQ2 Sustainable Design and Construction, which outlines that new developments should meet Level 4 of the Code for Sustainable Homes as minimum, specific credits for ENE2 Fabric Energy Efficiency (five credits) and Mat 1 Environmental Impact of Materials (ten credits) should be met to address local air quality conditions.

11.30 Hounslow is currently in the process of preparing its GWC Local Plan Review and Site Allocations Documents, setting out a vision for the borough for the next 15 years. The Plans have undergone extensive consultation but not yet been taken to Examination. The Local Plan currently under review are split into; West of the Borough and the Great West Corridor, the latter of which will be relevant for the Development.

11.31 Policy GWC3- Health and Wellbeing within the Great West Corridor Local Plan Review (July 2019)[ix] outlines the future policy that will be adopted across this area of the borough. The policy acknowledges the significance of air pollution across the Great West Corridor as a result of heavy congestion on the A4/M4 and the resulting impact on the health of individuals in Hounslow.

11.32 The policy looks to "*create high quality accessible places with local services and infrastructure that enable active and healthy lifestyles, improve mental and physical health and well-being and reduce health inequalities"* and this will be achieved through a number of steps, those relevant to air quality are presented below;

- Working with stakeholders to deliver measures to minimise air and noise pollution as set out in the Air Quality Action Plan and Noise SPD, and to become Air Quality Positive by implementing measures across the area that will actively reduce air pollution, in order to improve the environmental quality of the area.

11.33 The policy also sets out its expectations for development proposal, those relevant to air quality include;

- Ensure site and building design minimises exposure to elevated levels of air and noise pollution through:
  - locating sensitive uses away from existing or planned sources of air and noise pollution, including through the siting of less sensitive non-residential uses adjacent to the A4 and M4 to act as a physical "buffer" between the roads and more sensitive uses to the rear;
  - the provision of winter gardens and balconies; and
  - the use of greenery to act as a "buffer" along the A4/M4 corridor and other streets.
- Consider health and wellbeing during the design stages and use Best Available Techniques (BATs) to mitigate and minimise any adverse effects on health and quality of life (e.g. soil, noise, water, air or light pollution). Proposals for major development schemes should also be supported by Noise Assessment, Air Quality Assessment (AQA) and a Health Impact Assessment (HIA).
- Minimise air pollution making new developments 'air quality positive' in accordance with the Mayor SPG on Sustainable Design

LBH air quality supplementary planning document

11.34 LBH have also published an air quality supplementary planning document (SPD)[x] which sets out the information required for air quality assessments and further guidance on air quality

considerations.

11.35 The air quality SPD states:

> *'Careful consideration should be given to the site and area characteristics of the development, as particular elements of a scheme may be more sensitive to air pollution than others. For example, children's play spaces or housing should be located away from roads with high levels of air pollution…*
> *Hounslow will also consider issues such as ventilation provision and location of opening windows and doors to improve indoor air quality. In the case of tall buildings, mixed use can help make development acceptable by, for example, placing residential use on higher storeys away from air pollution (and noise) at ground level, allowing for balconies and workable windows, while lower floors can accommodate commercial uses where mechanical ventilation and windows that cannot be opened are more acceptable.'*

Legislative Context

European Legislation

11.36 The European Union (EU) directive on ambient air quality and cleaner air for Europe (2008/50/EC)[xi] sets legally binding limits for pollutant concentrations. This directive was made law in England through the Air Quality Standards Regulations 2010[xii].

National Legislation

11.37 Part IV of the Environment Act 1995[xiii] places a duty on the Secretary of State for the Environment to develop, implement and maintain an Air Quality Strategy with the aim of reducing atmospheric emissions and improving air quality. The latest Air Quality Strategy[xiv] for England, Scotland, Wales and Northern Ireland was published in 2007, and provides the framework for ensuring the air quality limit values are complied with based on a combination of international, national and local measures to reduce emissions and improve air quality. The Air Quality Strategy includes a statutory duty, also under Part IV of the Environment Act 1995, for local authorities to undergo a process of Local Air Quality Management (LAQM). This requires local authorities to regularly and systematically review and assess air quality within their boundaries against a series of objectives and appraise development and transport plans against these assessments.

Air Quality Strategy

11.38 The Air Quality Strategy published by the Department for Environment, Food and Rural Affairs

(Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the LAQM regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an Air Quality Management Area (AQMA) and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

Air Quality Standards (Standards) Regulations 2010[xv]

11.39 UK English legislation which implements Community legislation on ambient air quality assessment, management and sets legally binding limit values for air quality with respect to human health and vegetation. The regulation transposes Directive 2008/50/EC, which entered into force in Europe on June 2008, it consolidates and replaces previous ambient air quality legislation.

National Air Quality Plan for Nitrogen Dioxide (2017)[xvi]

11.40 The National Air Quality Action Plan looks to tackle poor air quality in all its forms, with a focus on NO2 from transport emissions due to year on year exceedances to the statutory limit. The overarching objective is to reduce concentrations where levels are above legal limits in the shortest possible time, transforming the most polluted areas of the UK into clean and safe spaces.

Clean Air Strategy (2019)[xvii]

11.41 The strategy presents the approach the UK Government are taking to deal with air pollution holistically. The core aims include; making the UK air cleaner and healthier, protecting nature and boosting the economy. The clean air strategy covers several strands of government and society, with targeted approaches set out for the following sectors; transport, homes, farming and industry.

Air Quality Objectives

11.42 In areas where air quality objectives are not likely to be met by the relevant target date, local authorities are required to declare an AQMA and develop an air quality action plan in pursuit

of the air quality objectives. The national air quality objectives relevant to this chapter are detailed in Table 11.1.

Table 11.1 NO_2 and $PM_{10/2.5}$ National Air Quality Objectives included in the Air Quality (England) Regulations 2000

Pollutant	Objective	Date to be achieved and maintained thereafter
Nitrogen dioxide (NO_2)	200µg/m^3 measured as a 1-hour mean, not to be exceeded more than 18 times a year.	31st December 2005
	40µg/m^3 measured as an annual mean.	
Particulate Matter (PM_{10})	50µg/m^3 measured as a 24-hour mean, not to be exceeded more than 35 times a year.	31st December 2004
Particulate Matter ($PM_{2.5}$)	25µg/m3 measured as an annual mean.	2020

11.43 As with many London boroughs the entirety of LBH has been declared as an AQMA due to exceedances of the annual mean air quality objective for nitrogen dioxide (NO_2). The AQMA was designated by LBH in 2006.

LBH Air quality action plan[xviii]

11.44 LBH published an Air Quality Action Plan[xix] in September 2018 to address the air quality issues within the council's jurisdiction; the action plan includes an extensive break down of major air pollution sources. A key source of pollution identified is road transport, however aviation also contributes to background pollution levels due to the proximity to Heathrow airport. Following the Local Air Quality Management process the air quality action plan is a response to the declaration of an air quality management area which seeks to improve air quality to legal levels.

11.45 The action plan also sets out a number of measures that are to be implemented across 2018-2023, a number of which are targeted towards emissions from developments and buildings. The most relevant measures to this Development are:

> *Emissions for developments and buildings*
> *(1) The council will ensure developers submit construction environment management plans (CEMPs) and that they incorporate adequate, effective and enforceable measures to protect inhabitants, their amenity and sensitivity to the area.*
> *(1.1) The council will develop and implement enhanced planning conditions for new developments in respect to Air Quality Neutrality.*

(2) The council will ensure appropriate enforcement on Non-Road Mobile Machinery (NRMM) air quality policies.

(4) The council will ensure that all relevant developments will meet air quality neutral standards, to be measured by recording all relevant planning applications and whether the AQ neutral standard has been met.

(5) The council will seek to secure adequate, appropriate and well located green space and infrastructure is included in new developments.

Assessment Methodology

Construction Phase Impacts

11.46 Potential construction impacts have been assessed in accordance with the Institute of Air Quality Management (IAQM) construction dust guidance[xx] and the GLA's control of dust during construction and demolition supplementary planning guidance (SPG)[xxi]. These guidance documents provide a methodology for assessing air quality impacts from demolition, earthworks, construction and trackout activities which may be associated with a development. The GLA's SPG is based on the approach taken by IAQM, focusing on London in particular, and representing best practice for developers.

11.47 The IAQM dust assessment methodology involves the following steps:

1) A screening assessment to identify the need for detailed assessment. Detailed assessment will be required where there is:
   A) A human receptor within:
      - 350m of the site boundary; or
      - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).
   B) An ecological receptor within:
      - 50m of the site boundary; or
      - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).
2) Assess the risk of dust impacts by: (a) defining the potential dust emission magnitude, (b) defining the sensitivity of the area, and (c) assessing the risk of impacts. Criteria for defining the dust impacts are shown in Appendix 11.1.
3) Determine site-specific mitigation for each of the four possible construction activities; and
4) Examine residual effects to determine whether these are significant.

11.48 This assessment will focus on demolition, earthworks, construction, and trackout. IAQM guidance suggests that the significance of any adverse effects are reported post-mitigation,

assuming all actions to avoid or reduce environmental effects are an inherent part of the Development.

11.49 Whilst the significance of the effects are assessed post-mitigation it is of note that some mitigation measures will be secured through planning conditions following submission of the planning application.

11.50 IAQM has deliberately made the screening criteria conservative in order to ensure that most, if not all, development schemes will require assessments of their air quality impacts.

11.51 Construction traffic emissions are also considered in relation to criteria detailed in Table 11.2.

Construction receptors

11.52 IAQM construction guidance describes a construction dust receptor as:

> *"a location that may be affected by dust emissions during demolition and construction. Human receptors include locations where people spend time and where property may be impacted by dust. Ecological receptors are habitats that might be sensitive to dust"*.

11.53 In accordance with IAQM guidance, the principles that are applied to assess and classify sensitivity of receptors are described in Table 11.2.

Table 11.2 Construction Receptor Sensitivity

Sensitivity of receptor	Sensitivity to dust soiling	Sensitivity to health effect of PM_{10}	Sensitivity to ecological effects
High	Areas where a high level of amenity would be reasonably expected Areas where the appearance, aesthetics or value of a property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land; and Indicative examples include dwellings, museums and other culturally important collections, medium and long-term car parks and car showrooms.	Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objective, a relevant location would be one where individuals may be exposed for eight hours or more in a day; and Indicative examples include residential properties, hospitals, schools and residential care homes.	Locations with an international or national designation and the designated features may be affected by dust soiling; Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain; and Indicative examples include a Special Area of conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.

Sensitivity of receptor	Sensitivity to dust soiling	Sensitivity to health effect of PM_{10}	Sensitivity to ecological effects
Medium	Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; The appearance, aesthetics or value of their property could be diminished by soiling; The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods; and Indicative examples include parks and places of work.	Locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day); Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.	Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; Locations with a national designation where the features may be affected by dust deposition; and Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.
Low	The enjoyment of amenity would not reasonably be expected; Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time; and Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.	Locations where human exposure is transient; and Indicative examples include public footpaths, playing fields, parks and shopping streets.	Locations with a local designation where the features may be affected by dust deposition; and Indicative example is a local Nature Reserve with dust sensitive features.

11.54 The construction of the Development will have a phased approach, with new residents living in completed areas of the Development whilst other areas are still being constructed. The residents introduced once early phases of the Development are completed will be sensitive to the construction still taking place on the Site.

Operational Phase Impacts

11.55 The Environmental Protection UK (EPUK)/IAQM[xxii] has published guidance on the consideration of air quality within the planning and development control process. This guidance includes criteria which identify when relevant operational impacts can be screened out or require further assessment. Criteria relevant to this assessment are detailed in Table 11.3 . These criteria also apply in the consideration of construction traffic emissions.

Table 11.3 Indicative criteria for requiring an air quality assessment

The Development will:	Criteria:
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans).	A change of LDV flows of: - more than 100 annual average daily traffic (AADT) within or adjacent to an AQMA; and - more than 500 AADT elsewhere.
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight).	A change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA; and - more than 100 AADT elsewhere.
Have one or more substantial combustion processes, where there is a risk of impacts at relevant receptors. NB, this includes combustion plant associated with standby emergency generators (typically associated with centralised energy centres) and shipping.	Typically, any combustion plant where the single or combined NO_x emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates. Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable.

Operational Traffic Emissions

11.56 Road traffic emissions are considered in relation to the impact from a change in traffic as a result of the Development. The assessment also takes into account traffic flows associated with future committed developments.

11.57 Traffic data has been provided by the project transport consultant, RHDHV, for roads within the vicinity of the Site. Traffic data for roads that have been taken into consideration in the assessment are presented in Appendix 11.3.

11.58 Pollutant concentrations are predicted at worst case existing and proposed future receptor locations using the dispersion model ADMS-Roads (v5.1). This model is developed by Cambridge Environmental Research Consultants (CERC) and can be used to assess the impact of vehicle emissions and industrial sources on local air quality. Unlike simpler spreadsheet screening tools, it can include parameters such as variable meteorological conditions, complex road networks (including the combined contribution of multiple road links on single sensitive receptors). The model is widely used by local authorities in the UK as part of their review and assessment obligations.

11.59 This assessment considers traffic-related pollutant concentrations (NO_2, PM_{10} and $PM_{2.5}$) at existing receptors in the vicinity of the Site. The assessment considers existing traffic flows on the local road network as well as the predicted change in traffic as a result of the

Development.

11.60 The scenarios considered in this assessment are aligned with the scenarios considered in Chapter 9 Transport and Access. Pollutant concentrations are predicted at receptors for the following scenarios:

1. 2019 Existing Baseline *(Transport chapter Scenario 1)*;
2. 2023 Do Nothing – Future baseline for construction peak year (including committed development flows) without the Development *(Transport Chapter Construction Scenario 2)*;
3. 2023 Do Something - Peak Construction Year for the future baseline (including committed development with Development construction flows) *(Transport Chapter Construction Scenario 3);*
4. 2026 Do Nothing – Future baseline (including committed developments) without the Development *(Transport Chapter Operational Scenario 2)*;
5. 2026 Do Something – Future baseline (including committed developments (including cumulative Osterley Tesco Site)) with the Development operational flows *(Transport Chapter Operational Scenario 4)*.
6. 2026 Do Something – Future baseline (including committed developments but not including cumulative Osterley Tesco Site) with the Development operational flows. Under this scenario, the Osterley Tesco store would remain as existing *(Transport Chapter Operational Scenario 3)*.

11.61 The impact of the Development has been assessed by comparing the Do Nothing and Do Something scenarios for future years.

11.62 Scenario 5 is considered the most realistic operational scenario due to the planning linkages between the Development and the Tesco Osterley scheme (Chapter 2 EIA Methodology). As such, the impacts and effects of this scenario have been reported in the chapter. The impacts and effects for the scenario listed under point 6 at paragraph 11.60 are presented in Appendix 11.11. This is the unrealistic scenario whereby only the Development is delivered without the Tesco Osterley scheme being delivered (Transport Chapter Scenario 3).

11.63 The future baseline year of 2026 has been used as this is the planned opening year of the Development. Whilst the Transport Chapter also assesses a 2035 operational year, this is not required for this air quality assessment as 2026 will offer a worst-case assessment of concentrations at existing and proposed receptor locations, owing to higher vehicle emission factors and higher background pollutant concentrations.

11.64 Vehicle emissions have been calculated based on vehicle flow, composition and speed data using the EFT (Version 9.0) published by Defra.

11.65 Hourly sequential meteorological data from Heathrow Airport for 2019 has been used in the model.

11.66 Pollutant concentrations were predicted at existing receptor locations likely to be worst affected by emissions generated by the Development; worst case impacts are expected at residential locations located in the closest proximity to impacted roads and junctions, including those adjacent to Great West Road and Gillette Corner. The worst-case height modelled is 1.5m, to represent average breathing height of a human receptor.

11.67 Proposed onsite receptor locations have been included in the assessment in order to assess exposure of future Site occupants to poor air quality. Receptor locations include existing residential properties and amenity spaces. Receptor locations are detailed in , Table 11.7 and presented in Figure 11.1.

Operational Combustion plant emissions

11.68 The Development will be predominantly served by heat pumps, with combustion plant as top up (see Chapter 3 Site and Development Description for a summary of the energy strategy, which is included as Appendix 3.2). However, for the purposes of this assessment and in the interest of worst-case assessment, it has been assumed that the Development will be solely served by the combustion plant (i.e 100% of the demand of the Development will be met by combustion plant). The Development includes the following combustion plant equipment:

- 3 No. Ideal Evojet 1000kw boilers

11.69 The impact of emissions from the proposed plant have been predicted using point sources within the ADMS Roads dispersion model. The model has been run to predict the contribution of plant emissions to annual mean and the 99.79th percentile of 1-hour mean nitrogen oxides concentrations.

11.70 The emission parameters used in the modelling are set out in Table 11.5. This information has been supplied by the appointed MEP consultant and taken from the plant equipment technical data sheets.

Table 11.4 Emission parameters for boiler modelling

Parameter	Value
Boilers	
Flue Internal Diameter (m)	0.75
Flue Height (m)	55
Velocity (m/s)	3.4
Specified NO_x Emission Rate (g/s)	0.0331
Specified Exhaust Temperature (°C)	75
Stack Location (X, Y)	516458,177319

*stack location is shown in Figure 11.2, it is located above roof level of B3, the building at the south-east corner of the site.

11.71 Entrainment of the plume into the wake of the buildings (building downwash effect) has been considered in the model. The building dimensions and flue location have been obtained from architectural drawings (refer to Appendix 3.1). The location of the flues and the building set ups are shown in Figure 11.2.

11.72 Hourly sequential meteorological data from Heathrow Airport for 2019 have been used in the model.

11.73 For the boilers, model outputs have been assessed assuming the boilers will be in use at 100% load all year round. This is a worst-case assumption and lead to an overestimation of any assessed impact.

Background Concentrations

11.74 The background pollutant concentrations across the study area (the Site and across impacted roads as shown in Figure 11.3) have been defined using the national pollution maps published by Defra (2018a)[xxiii]. These cover the whole of the UK on a 1x1 km grid and are published for each year from 2015 until 2030.

11.75 Following consultation with the LBH, 2019 background concentrations have been used in all modelling scenarios. Defra's projections predict pollutant concentrations will decrease year on year as result of air quality improvement measures, such as the Ultra-Low Emission Zone and overall improvement of national fleet emission, as such using 2019 background concentrations in future scenarios provides a worst-case assessment. Appendix 11.10 presents the email correspondence with LBH and a brief summary of the consultation meeting.

Model Verification and Model Post-Processing

11.76 The ADMS-Roads model was used to assess operational emissions. In order to ensure that ADMS-Roads accurately predicts local concentrations, it is necessary to verify the model against local measurements.

11.77 Defra provide tools for model post-processing, for example the NO_x to NO_2 calculator, which have been used in this assessment as per Defra technical guidance.

11.78 The details of both the verification and model post processing are outlined in Appendix 11.4.

Air Quality Neutral

11.79 In line with the requirements of the existing London Plan and the LBH air quality action plan, an air quality neutral assessment has been undertaken for the Development. The full assessment, methodology and results, are presented in Appendix 11.9.

Operational receptors

11.80 Operational impacts are considered at receptor locations where there is relevant exposure to national air quality objectives, in line with LAQM TG16. Examples of receptors, dependent on the averaging period for pollutant concentration, are shown in Table 11.5. Air quality objectives are based on standards which are set at a level below the lowest concentration at which more sensitive members of the public have been observed to be affected by pollutant exposure. As any member of the public could be present at receptors which have relevant exposure, it is considered that all receptors are of equal sensitivity. Therefore, all receptors considered, where there is relevant exposure, will be of high sensitivity.

Table 11.5 Operation Receptor Sensitivity

Averaging period	Sensitive receptors occur at	Sensitive receptors generally do not occur at
Annual mean	All locations where members of the public might be regularly exposed. 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; Hotels, unless people live there as their permanent residence; Gardens of residential properties; and 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. 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.

Hourly mean	All locations where the annual mean and 24 -hour mean objective apply. Kerbside sites (for example, pavements of busy shopping streets). 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. Any outdoor locations where members of the public might reasonably expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

11.81 NO_x, $PM_{2.5}$ and PM_{10} concentrations were predicted at 48 proposed new residential receptor locations. Residential properties are proposed from 4.7m upwards and set back from the roadside by approximately 20m. The residential receptor locations in closest proximity to Great West Road begin at a height of 7.8m (Block B1). The residential properties which are located at lower elevations are located along Syon Gate Way (Blocks B3 and Block C) away from the elevated pollution levels expected close to Great West Road. The large majority of residential units are located above 4.7m. Figure 11.1 presents the locations of the proposed receptors.

11.82 As well as the proposed residential receptors, receptors relevant to the short-term air quality objectives have been modelled in the opening year Do Something scenario. Two locations near to the Tesco store entrance have been included within the model, the predicted concentrations of which will be compared against the NO_2 hourly mean objective.

11.83 Receptor locations, and the modelled road network used in the assessment are shown in Figure 11.3. Existing and new receptor grid references and modelled height are shown in and 11.7 respectively.

11.84 Combustion plant emissions have been scoped out at existing receptor locations due to the distance from the flue and the low NO_x emissions from proposed combustion plant of the Development.

Table 11.6 Existing Receptor Locations

Existing Receptor	X	Y	Heights Modelled
R1	516155	177401	1.5
R2	516034	177348	1.5
R3	516161	177367	1.5

R4	516038	177298	1.5
R5	516304	177296	1.5
R6	516376	177237	1.5
R7	516491	177207	1.5
R8	516541	177088	1.5
R9	516532	176912	1.5
R10	516384	176799	1.5
R11	516517	176686	1.5
R12	516676	176951	1.5

Table 11.7 Proposed Receptor Locations

New Receptor	X	Y	Heights Modelled
Tesco Entrance A	516326.07	177352.47	1.5
Tesco Entrance B	516331.64	177364.08	1.5
NR1	516368.62	177313.27	17.25, 20.4, 23.55, 26.7
NR2	516384.94	177314.54	17.25, 20.4, 23.55, 26.7
NR3	516399.47	177330.6	17.25, 20.4, 23.55, 26.7
NR4	516399.47	177347.68	17.25, 20.4, 23.55, 26.7
NR5	516371.17	177330.6	17.25, 20.4, 23.55, 26.7
NR6	516382.13	177341.05	17.25, 20.4, 23.55, 26.7
NR7	516389.62	177389.61	7.8, 10.95, 14.1, 17.25, 20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45, 45.6, 48.75, 51.9, 55.05, 58.2
NR8	516404.44	177389.43	7.8, 10.95, 14.1, 17.25, 20.4, 23.55, 26.7
NR9	516392.17	177374.42	36.15, 39.3, 42.45, 45.6, 48.75, 51.9, 55.05, 58.2
NR10	516406.06	177384.68	23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45, 45.6, 48.75, 51.9, 55.05, 58.2
NR11	516409.23	177369.87	36.15, 39.3, 42.45, 45.6, 48.75, 51.9, 55.05, 58.2
NR12	516486.82	177313.97	4.65, 7.8, 10.95, 14.1, 17.25, 20.4
NR13	516437.17	177330.12	36.15, 39.3, 42.45, 45.6, 48.75
NR14	516486.42	177303.83	4.65, 7.8, 10.95, 14.1, 17.25, 20.4
NR15	516416.29	177321.68	17.25, 20.4, 23.55, 26.7
NR16	516431.07	177311.23	17.25, 20.4, 23.55, 26.7
NR17	516398.7	177298.49	17.25, 20.4, 23.55, 26.7
NR18	516413.97	177286.77	17.25, 20.4, 23.55, 26.7
NR19	516402.01	177285.74	17.25, 20.4, 23.55, 26.7
NR20	516430.82	177322.19	17.25, 20.4, 23.55, 26.7

NR21	516459.63	177286.64	20.4, 23.55, 26.7, 29.85, 33
NR22	516454.58	177267.23	7.8, 10.95, 14.1, 17.25, 20.4, 23.55, 26.7, 29.85, 33
NR23	516441.04	177278.98	20.4, 23.55, 26.7, 29.85, 33
NR24	516433.53	177254.67	20.4, 23.55, 26.7, 29.85, 33
NR25	516477.32	177320.23	17.25, 20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45, 45.6, 48.75
NR26	516335.16	177352.57	26.7
NR27	516366.08	177378.33	17.25, 20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45
NR28	516340.68	177355.18	33
NR29	516342.29	177355.35	33
NR30	516346.36	177370.26	17.25, 20.4, 23.55, 26.7
NR31	516366.05	177354.01	20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45
NR32	516451.33	177345.7	17.25, 20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45, 45.6
NR33	516381.53	177357.96	20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45
NR34	516465.31	177305.03	20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45, 45.6, 48.75
NR35	516463.45	177319.12	36.15, 39.3, 42.45, 45.6, 48.75
NR36	516480.48	177305.68	20.4, 23.55, 26.7, 29.85, 33, 36.15, 39.3, 42.45, 45.6, 48.75
NR37	516436.79	177343.76	36.15, 39.3, 42.45, 45.6, 48.75
NR38	516452.25	177330.09	36.15, 39.3, 42.45, 45.6, 48.75
NR39	516408.14	177356.77	4.65, 7.8, 10.95, 14.1, 17.25, 20.4, 23.55, 26.7
NR40	516423	177371.68	7.8, 10.95, 14.1, 17.25, 20.4
NR41	516436.88	177359.9	7.8, 10.95, 14.1, 17.25, 20.4
NR42	516423.63	177343.67	4.65, 7.8, 10.95, 14.1, 17.25, 20.4, 23.55, 26.7
NR43	516333.35	177360.13	17.25, 20.4, 23.55, 26.7
NR44	516330.88	177349.75	17.25, 20.4, 23.55, 26.7
NR45	516333.18	177342.83	17.25, 20.4, 23.55, 26.7
NR46	516340.76	177336.24	17.25, 20.4, 23.55, 26.7
NR47	516350.97	177335.91	17.25, 20.4, 23.55, 26.7
NR48	516346.8	177357.61	38

Significance Criteria

11.85 EPUK and IAQM have produced guidance[XV] to ensure adequate consideration of air quality matters in the development control process. This guidance provides a framework for describing the degree of impact resulting from a change in air pollutant concentration. Impact is described by expressing the magnitude of incremental change as a proportion of a relevant assessment level and then to examine this change in the context of the new total concentration and its relationship with the assessment criterion (or Air Quality Assessment Level (AQAL)).

11.86 The overall significance of the air quality impacts, whether beneficial or adverse, is considered holistically taking into account of a number of factors.

11.87 Table 11.8 sets out impact descriptors of individual receptors but does not consider the wider implications of the assessment as a whole. Whilst a number of individual receptors may be 'slight' or 'moderate' the overall effect may not necessarily be considered significant.

11.88 Judgement on the overall significance of an effect must consider:

- Existing and future air quality in the absence of the development;
- The extent of current and future population exposure to the impact; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

Table 11.8 Significance Criteria for Air Quality Impacts

Long term average concentration at receptor in assessment year	% Change in concentration relative to Air Quality Assessment Level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

11.89 The overall significance of the air quality impact, whether beneficial or adverse, is considered holistically taking into account of a number of factors. Table 16.6 sets out impact descriptors for individual receptors. Whilst a number of individual receptors may be 'slight' or 'moderate' the overall effect may not necessarily be considered significant.

11.90 Judgement on the overall significance of an effect must consider;

- Existing and future air quality in the absence of the Development;
- The extent of current and future population exposure to the impact; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

11.91 It is important to note that for proposed receptors where air quality objectives are predicted to be exceeded, the effect on residents or occupants will be significant. In the event these objectives are exceeded, provision for mitigation measures should proposed in order to avoid significant effects.

Limitations and Assumptions

Road traffic modelling

11.92 There are a number of components that contribute to the uncertainty of modelling predictions. The road traffic emissions dispersion model used in this assessment is dependent upon the traffic data that has been inputted, which will have uncertainties associated with it, outlined in Chapter 9 Transport and Access (paragraphs 9.88-9.91). The baseline traffic data used in the assessment pre-dates the COVID-19 pandemic, whilst changes to traffic have been seen, this data is still considered of representative of normal baseline conditions. There are then additional uncertainties, as models are required to simplify real-world conditions into a series of algorithms, these uncertainties are unavoidable in any computational modelling and are present in all dispersion modelling studies.

11.93 An important stage in the process is model verification, which involves comparing the model output with measured concentrations. This can only be done for the road traffic model. Because the model has been verified and adjusted, there can be reasonable confidence in the prediction of base year (2018) concentrations. The process of verification is established and seen in all air quality assessment studies.

11.94 Predicting pollutant concentrations in a future year will always be subject to greater uncertainty. Naturally, the model cannot be verified in the future, and it is necessary to rely on a series of projections provided by the Department for Transport (DfT) and Defra as to what will happen to traffic volumes, background pollutant concentrations and vehicle emissions. In this assessment, no change to background concentrations has been predicted in order to ensure a conservative approach.

Energy centre modelling

11.95 The point source dispersion model used in the assessment is dependent upon emission rates, flow rates, exhaust temperatures and other parameters for each source, all of which in reality are variable as the plant will operate at different loads at different times.

11.96 There are then additional uncertainties, as models are required to simplify real-world conditions into a series of algorithms. These uncertainties cannot be easily quantified and it is not possible to verify the point-source model outputs.

Baseline Conditions

11.97 Baseline data has been gathered from the following sources;

- LBH Annual Status Report (2018);[xxiv]
- Defra national air quality background maps; and
- Baseline traffic flows supplied by the appointed traffic consultant (RHDHV), see Appendix 11.3.

11.98 The need for on-site air quality monitoring was scoped out of the assessment and not deemed necessary following Scoping Opinion[xxv]. Baseline conditions have been established through the use of existing monitoring data (some of which are located in areas which will be comparable to on-site conditions) and through dispersion modelling utilising the supplied traffic information.

Local Air Quality Management

11.99 A borough wide AQMA has been declared across LBH due to exceedances of the Air Quality Objective for annual mean NO_2.

Air Quality Monitoring Data

11.100 LBH undertakes monitoring of air quality at 61 locations across the borough using diffusion tubes and automatic monitoring locations. Monitoring locations in the vicinity of the Site are presented in Figure 11.4.

11.101 Monitoring results for all nearby sites are presented in Table 11.9-11. Monitoring data indicates

that the annual mean NO_2 objective has been exceeded at roadside sites in recent years, however the objective is achieved at the background site in Osterley Park (HS83). In 2018 there were significant reductions in monitored NO_2 at these nearby sites, including at roadside sites HS61 and HS68 to below the air quality objective value. This is likely due to improvements in national fleet emissions and local policies that look to minimise emissions and reduce road traffic (in London this includes; Ultra Low Emission Zone, Cycle to Work Schemes, the Congestion Charge, etc.). The Ultra-Low Emission Zone is planned to expand in 2021 which could lead to further improvement in air quality.

11.102 With regard to concentrations monitored at the nearby automatic monitoring stations, both sites have exceeded the NO_2 annual mean objective limit for the last four years. Short-term air quality objective limits have been met at both the automatic sites since 2014.

11.103 PM_{10} concentrations results are slightly lower at the two automatic sites, with no exceedances of either the long-term or the short-term objectives.

Table 11.9 Diffusion tube monitoring data for LBH

Site ID	Location	Site type	NO_2 concentration (µg/m^3)				
			2015	2016	2017	2018	2019
HS32	32 Adelaide terrace	Roadside	**58.8**	**59.4**	**50.3**	**43.2**	**-**
HS67	Busch Corner	Roadside	**74.2**	**67.8**	**59.6**	**48.4**	**50.5**
HS61	Twickenham Road	Roadside	**42.4**	**40.8**	**40.0**	32.1	-
HS68	Junction of Commerce Road	Roadside	**52.1**	**52.2**	**43.8**	36.5	37.0
BREN	Brentford, Glenhurst Road	Roadside (Co-location)	**62.1**	**64.7**	**65.4**	**48.6**	**-**
HS83	Osterley Park	Background	22.0	27.0	24.8	19.9	-

Figures in **bold** indicate an exceedance of the long term air quality objective

Figures **underlined and bold** indicate a potential exceedance to the short term air quality objective, as per TG16 Guidelines.

Table 11.10 LBH NO_2 automatic monitoring data

Site ID	Site type	Annual mean NO_2 concentration (µg/m^3)				Number of hourly mean NO_2 exceedances > 200 µg/m^3 (18 allowable)			
		2015	2016	2017	2018	2015	2016	2017	2018
BREN	Roadside	**53.3**	**56.9**	**54.0**	**48.0**	0	7	12	0
HEST	Roadside	**40.7**	**42.2**	**44 .0**	**40.0**	0 (120)	1 (176)	6	0

Figures in **bold** indicate an exceedance of the air quality objective

Table 11.11 LBH PM_{10} automatic monitoring data

Site ID	Site Name	Site type	Data Capture (%)	Annual mean PM_{10} concentration (µg/m³)				Number of 24-hourly mea PM_{10} exceedances >50 µg/m³ (35 allowable)			
				2015	2016	2017	2018	2015	2016	2017	2018
BREN	Brentford	Roadside	99.6	31.1	30.7	28.0	26.0	30	28	24	4
HEST	Heston	Roadside	99.7	24.9	25.9	23.0	22.0	10	17 (42)	9	2

Figures in **bold** indicate an exceedance of the air quality objective

Estimated Background Air Quality Data

11.104 The Defra website includes estimated background air pollution data for NO_2 and PM_{10} for each 1km by 1km OS grid square. Background pollutant concentrations are modelled from the reference year of 2017 based on ambient monitoring and meteorological data from 2017 and includes projections for future years up to 2030. Background concentrations are predicted to decrease year on year owing to national fleet emissions improvement, point source emissions improvement and control and also impacts from mitigation measures such as the Ultra-Low Emission Zone.

11.105 Predicted background concentrations for 2018 and 2019 in the grid square where the Development is located are outlined in Table 11.12.

Table 11.12 Predicted Defra mapped background concentrations of NO_2, $PM_{2.5}$ and PM_{10} for 2018 and 2019

Pollutant	Annual mean background concentrations (µg/m³) Grid Square: 516500, 177500	
	2018	2019
Nitrogen dioxide (NO_2)	26.6	25.7
Particulate matter (PM_{10})	18.5	18.4
Particulate matter ($PM_{2.5}$)	13.4	13.3

Future Baseline

11.106 Future baseline conditions have been predicted using ADMS-Roads in the dispersion modelling study, taking into account realistic worst-case assumptions in order to assess likely future conditions at receptors on and around the Site.

Likely Significant Effects

Construction Phase

11.107 The IAQM guidance criteria used to assess the potential impacts from construction activities is detailed in Appendix 11.1. The following steps explain the site specific assessment in the context of the IAQM criteria.

Step 1: Screen the need for a detailed assessment

11.108 In accordance with screening criteria in the IAQM guidance, an assessment is required as receptors are located within 350m of the Site boundary, and within 50m of the routes used by construction vehicles on the public highway within 500m from the Site entrance.

Step 2A: Define the potential for dust emission magnitude

11.109 Chapter 5 describes the construction methodology for the Development and sets out the indicative phasing programme, with the works anticipated to be completed in 2026. The works include the demolition of existing structures, earthworks, and construction of the proposed buildings. Dust will arise from vehicles travelling over unpaved ground, the handling and storage of dusty materials, and from the cutting of concrete.

11.110 Due to the size of the Site and scale of the Development, the magnitude of dust emissions during construction has the potential to be medium. The Site area measures approximately 1.5ha and the existing Homebase structure (building volume estimated to be 43,000m^3) will be demolished as part of the Development.

11.111 In line with the predicted construction traffic figures, the trackout magnitude will be large. The estimated maximum construction traffic trips per day in the peak construction month is 97 (presented in Chapter 9- Transport) which exceeds the threshold of 50 outward heavy duty vehicle (HDV) movements indicated of a large trackout emission magnitude. Trackout will follow the Great West road, either east or west, and the main access will be via Syon Lane.

Table 11.13 Dust Emission Magnitude for Construction Activities

Activity	Dust emission magnitude
Demolition	Large
Earthworks	Large
Construction	Large

Trackout	Large

Step 2B: Define the sensitivity of the area

11.112 The surrounding area is considered to be of high sensitivity to the impacts of construction dust. There are residential receptors to the south-east and south-west of the Site and a car showroom immediately to the east of the Site. The sensitivity of the area also takes into account early phases of the Development being occupied whilst construction works of later phases are ongoing on the Site.

11.113 The trackout routes have a number of residential receptors within 20m of the route, predominantly along Great West road. Receptors along this road are set back from the roadside, along Syon Lane/Spurs Road and separated by a barrier of vegetation.

11.114 With regards to the sensitivity to human health, taking into account baseline PM_{10} concentrations, the surrounding area is considered to be of medium sensitivity.

Table 11.14 Sensitivity of the Surrounding Area to Construction Dust Impacts

Potential impact	Sensitivity of surrounding area			
	Demolition	Earthworks	Construction	Trackout
Dust soiling	High	High	High	High
Human health	Medium	Medium	Medium	Medium

Step 2C: Define the risks of impacts

11.115 The risk of dust impacts for relevant construction activities are summarised in Table 11.12. These results take into account both the potential dust emission magnitude and the sensitivity of the area. Results show that the risk is considered high for demolition, earthworks and construction whilst the risk for trackout is medium. It should be noted that construction activities on the Site will be temporary in nature, and mitigation appropriate to the level of risk and in line with good industry practices will be implemented across the Site to ensure any adverse effects are minimised. The mitigation measures deemed necessary for the Development are outlined in the Mitigation Measures section, from para 11.105 onwards.

Table 11.15 Risk of Dust Impacts

Source	Dust soiling	Human health
Demolition	High Risk	High Risk
Earthworks	High Risk	Medium Risk
Construction	High Risk	Medium Risk
Trackout	High Risk	Medium Risk

Construction Traffic

11.116 Vehicle emissions from construction traffic generated as a result of the construction phase will have an impact on local air quality conditions, notably at receptors in close proximity to trackout routes. These receptors include residential units on; Great West Road and Northumberland Gardens.

11.117 Construction vehicle flows from the peak construction year have been used within the model to capture the worst-case scenario. Comparing the traffic flows for the future baseline and construction scenario for the peak construction year (2023) shows an overall decrease in AADT but a slight increase in HDV flows. Increases in HDV's are only expected on Syon Lane, with the largest (an additional 92 annual average daily HDV trips) being expected to the west; this is offset by Syon Lane also having the most considerable decrease of AADT. The decrease in AADT is a result of the closing of the Homebase store on the Site as well as the Tesco site at Osterley Park to the north of the Site.

11.118 In the interest of completeness, a dispersion study has been carried to quantify the impacts of the increase of HDVs despite the overall decrease in AADT.

11.119 Predicted pollutant concentrations at existing receptors are presented in Appendix 11.5.

11.120 The impact from construction traffic emissions is predicted to be negligible at all modelled receptor locations. No increase as a result of construction traffic emissions is predicted at any receptors with concentrations of all pollutants at all receptor locations marginally decreasing. The majority of existing sensitive receptors are at a considerable set back from the roadside and the emission decrease from the decrease in AADT outweighs the impact of the marginal increase in HDVs.

Operational Phase

11.121 The following operational aspects will have a potential impact on local air quality:

- Vehicle emissions from traffic generated as a result of the Development on the local road network; and
- Combustion plant emissions.

11.122 This section outlines the air quality impact from the operation of the Development on existing and proposed receptors, inclusive of impacts of from committed development (including the development of the Tesco Osterley scheme). Appendix 11.11 outlines the impact from the

operation of the Development without the cumulative development of the Tesco Osterley scheme; under the assumption the existing Tesco Osterley store will remain open. Whilst this scenario will not happen due because the development of the Homebase site is reliant on the Tesco Osterley store relocating to the Homebase site, it provides a worst case assessment with respect to traffic flows and therefore air quality conditions.

11.123 Predicted pollutant concentrations at existing receptors are presented in Appendix 11.6. The contribution from traffic emissions has been verified and processed using the NO_x to NO_2 calculator with 2019 background concentrations to give the total predicted concentrations. Combustion plant emissions have been scoped out at existing receptor locations due to the distance from the flue and the low NO_x emissions from proposed combustion plant of the Development.

11.124 The impact of operational traffic and emissions associated with the Development is predicted to be negligible at all existing receptors. Concentrations of all pollutants modelled (NO_2, PM_{10} and $PM_{2.5}$) at all existing receptors are expected to marginally decrease as a result of the traffic flows decreasing through the closing of the Homebase store, the committed developments (including the development of the Tesco Osterley site), and operation of the new Tesco store. Chapter 9-Transport provides detailed assessment of traffic impacts as a result of the operation of the Development.

11.125 As the Site is located within an AQMA, it is necessary to consider exposure of future Site users to poor air quality where there is relevant exposure to air quality objectives. As above, this section considers the most realistic operational scenario (with the Development, committed development (including cumulative Osterley Tesco scheme), Appendix 11.11 outlines the exposure of future Site users in the event the Osterley Tesco store remains in use, a scenario that will not happen due to the planning linkages between the Osterley Tesco scheme and the Development (refer to Chapter 2), but provides an worse case assessment.

11.126 Predicted pollutant concentrations at proposed onsite receptor locations are presented in Appendix 11.7. Results indicate that the annual mean air quality objectives for NO_2, PM_{10}, $PM_{2.5}$ are predicted to be met at all proposed onsite receptors, at all heights. This is likely due to the ample separation of the residential units from the roadside, paired with the elevated height of residential units. The highest concentration is predicted at new receptor 7 (NR7B) predicting a concentration 36.0 $\mu g/m^3$ at a height of 7.4m, this receptor is the closest (8m from kerbside) to the predominant source of pollution, Great West Road, to the north of the Site. Actual concentrations seen at these receptor locations in 2026 will likely be below predicted results, as no improvements to background concentrations have been assumed in this assessment. As all receptors are below the relevant long-term air quality objectives no

significant air quality impacts are expected, therefore the air quality impacts on proposed receptors is negligible. As the air quality impacts are negligible, balconies are suitable at all proposed residential units on Site.

11.127 The two short term onsite receptors located near to the proposed Tesco Site entrance predicted the highest NO_2 annual mean concentrations (40.5 µg/m^3 and 43.3 µg/m^3) however these were still well below the 60 µg/m^3 NO_2 annual mean indicative of exceedances to the short term hourly NO_2 objective (shown in Appendix 11.7) and therefore impacts at short term receptors are negligible.

11.128 Impacts from the combustion plant are negligible at all new receptor locations, the largest contribution from combustion plant processes was seen at NR11 at a height of 58.2m, predicting an annual mean NO_2 contribution of 0.25 µg/m^3. Appendix 11.8 outlines short-term concentrations as result of combustion processes at all proposed receptor locations; the maximum predicted 99.79th percentile total NO_2 is 67.6 µg/m^3 (also seen at NR11 at 55.8m), considerably below the 200 µg/m^3 hourly limit.

11.129 With regards to short term air quality objectives as a result of the combined emissions, in accordance with LAQM TG16, it is considered that because annual mean NO_2 concentrations are below 60µg/m^3 at all new receptor locations, the hourly objective will be met.

11.130 For PM_{10} concentrations, dispersion models are inherently less accurate at predicting the number of exceedances of the 24-hour mean objective for PM_{10} than the annual mean objective. Accordingly, the relationship between annual mean and the number of 24-hour mean exceedances of 50 µg/m3, devised by LAQM TG16, has been used for assessment of the short-term PM_{10} objective. Appendix 11.8 presents the calculated number of daily exceedances. The maximum number of days exceeding the objective concentration is nine which is expected at the proposed entrance to the Tesco store. This is well below the annual number of allowable 35 exceedances of the national air quality objective. The maximum number of days exceeding the objectives at the residential receptors 5, again well below the 35 allowable exceedances. Impacts at the proposed receptors, as a result of short-term PM_{10} exposure are considered negligible.

Mitigation Measures

Construction Phase

11.131 Recommended mitigation measures are detailed below, these mitigation measures are informed by industry best practice and set out in the IAQM Construction dust emission

guidance[xvi]. These measures are recommended based on the magnitude of emissions and sensitivity of nearby receptors. These measures will be appropriately implemented and adhered to throughout the demolition and construction phases of the Development, ensuring the residual effects from the Development will be insignificant.

11.132 An Outline Design & Construction Method Statement and CEMP is submitted with the planning application (see Appendix 5.1). A detailed CEMP would be secured by planning condition.

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Display the name and contact details of person(s) accountable for air quality and dust issues on the Site boundary. This may be the environment manager/engineer or the Site manager;
- Display the head or regional office contact information; and
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by LBH. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. Additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include monitoring of dust deposition, dust flux, real time PM10 continuous monitoring and/or visual inspections.

Site management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to LBH when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book; and
- Hold regular liaison meetings with other high risk construction sites within 500m of the Site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to LBH when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the Site boundary, with cleaning to be provided if necessary;
- Carry out regular Site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to LBH when asked;
- Increase the frequency of Site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; and
- Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with LBH. Where possible commence baseline monitoring at least three months before work commences on the Site or before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

Preparing and maintaining the Site

- Plan the Site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the Site boundary;
- Fully enclose the Site or specific operations where there is a high potential for dust production and the Site is active for an extensive period;
- Avoid Site runoff of water or mud through mitigation such as the use of barriers around the site boundary;
- Keep Site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from the Site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle/machinery and sustainable travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM (non-road mobile machinery) standards, where applicable;
- Ensure all vehicles switch off engines when stationary – no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable;

- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate);
- Implementation of the Construction Logistics Plan which has been submitted along with the application to manage the sustainable delivery of goods and materials. This plan will undergo review and development as the details of the construction phase are finalised; and
- Implementation of the Travel Plan which has been prepared by the appointed transport consultant, which seeks to support and encourage sustainable travel (public transport, cycling, walking, and car-sharing).

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste management

- No bonfires or burning of waste materials.

Measures specific to demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations;
- Avoid explosive blasting, using appropriate manual or mechanical alternatives; and
- Bag and remove any biological debris or damp down such material before demolition;

- Further measures where identified within Construction Environmental Management Plan (CEMP).

Measures specific to earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Use hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
- Only remove the cover in small areas during work and not all at once.

Measures specific to construction

- Avoid scabbling (roughening of concrete surfaces) if possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; and
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures specific to track-out

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being continuously in use;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of haul routes and any subsequent action in a Site log book;
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);

- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit; and
- Access gates to be located at least 10m from receptors where possible.

Operational Phase

11.133 As the predicted operational impact is negligible (insignificant) in the most realistic operational scenario, no further mitigation measures are necessary.

Air Quality Neutral

11.134 The calculated building and transport emissions are well below the benchmarked emissions, this is due to the low parking numbers and use of emission free heat pumps. This means the Development is air quality neutral and no further mitigation is required. See Appendix 11.9 for full the full assessment.

11.135 The New London Plan[iv] sets out the expectation that all developments should be take an Air Quality Positive approach. Currently there is no Greater London Authority guidance on how a Development demonstrates an Air Quality Positive Approach. However, this scheme uses zero emission heat pumps and in the most realistic operational scenario (with the Tesco Osterley Store closing) traffic flows on the local road network will decrease.

Residual Effects

Construction Phase

11.136 With the implementation of recommended construction mitigation measures as detailed above, the residual effect will be negligible (insignificant).

Operational Phase

11.137 The predicted air quality impacts as a result of the operation of the Development were predicted to be negligible at all receptor locations. Therefore, the residual effects are predicted to be negligible

Cumulative Effects

Construction Phase

11.138 It is assumed that an appropriate assessment of potential construction effects will have been carried out at cumulative developments and necessary mitigation will have been identified. Mitigation for this Development will therefore compliment the mitigation identified for the other cumulative developments and ensure overall impacts are negligible.

Operational Phase

11.139 As all committed developments have been included within the traffic for the Development, the cumulative effects during operation is considered inherently within the assessment. The results from the operational phase assessment indicate air quality impacts are negligible at all receptors.

Summary

11.140 This assessment considers the air quality impacts of the construction and the operation of the Development at nearby existing receptors, inclusive of impacts from committed development (including the development of the Tesco Osterley Scheme (Scenario 5)). This chapter also assesses the exposure of future Site users and residents to poor air quality at proposed receptor locations for the same scenario.

11.141 The construction assessment has been carried out qualitatively and considers the potential impacts of construction and demolition activities, including dust nuisance and elevated particulate concentrations as a result of construction dust. Construction traffic emissions were assessed quantitively using air quality modelling software.

11.142 The potential impacts from the operation of the Development will be as a result of vehicle emissions from traffic generated by the Development and emissions from the use of proposed combustion plant serving the Development. The operational impacts have been assessed, using air quality modelling software, at existing and proposed new receptor locations.

11.143 The Site is located adjacent to Great West Road, a major arterial road within London. Local emissions from Great West Road paired with elevated background pollutant concentrations seen across London mean that baseline air quality conditions around the Site are poor. Three nearby roadside air quality monitoring sites exceeded the air quality objective limits.

11.144 Due to the size of the Development and proximity to local residential units, during the construction phase there is the potential for temporary major adverse impacts. Best practice

mitigation measures for controlling dust and emissions during construction have been presented; ensuring these measures are in place throughout construction will lead to a negligible (insignificant) residual effect during the construction phase.

11.145 During the construction phase there will be a minor increase in heavy duty vehicles on the local road network but the overall decrease in traffic will offset any potential air quality impacts from emissions from these vehicles. The operation of the Development is expected to lead to a net reduction of traffic on the local road network; this is due to the change of use and limited parking provision proposed.

11.146 In the most realistic operational scenario, traffic flows, and in turn traffic emissions will decrease in proximity to the Site which will lead to a marginal improvement in air quality with the Development in place.

11.147 No significant impacts are predicted at existing receptor locations as a result of the construction traffic or operation of the Development.

11.148 The heating and hot water requirements of the Development will be met predominantly by heat pumps, an emission free alternative to combustion plant equipment, with three low emissions boilers proposed as top-up which can be used when required. The emissions from the three boilers are not significant at existing or proposed receptor locations.

11.149 The potential air quality impacts on future Site users have been assessed in this chapter, pollutant concentrations at the residential unit locations across the Site have been predicted for the opening year and compared against air quality objectives. All residential units meet long and short-term air quality limits in the most realistic operational scenario.

11.150 Table 11.13 contains a summary of the likely significant effects of the Development.

Table 11.16: Table of Significance – Air Quality

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/ Negligible)
				I	UK	E	R	C	B	L	
Construction											
Impact from elevated PM_{10} concentrations on human health	Temporary	Major Adverse	Best practice mitigation measures for controlling dust/emissions during construction, to be implemented through the CEMP. Examples include: implementation of a construction logistics plan; ensuring all vehicles and machinery comply with Low Emission Zone and London Non Road Mobile machinery standards; avoid the use of diesel generators and covering, seeding or fencing stockpiles of fine material.							X	Negligible
Nuisance from dust deposition	Temporary	Major Adverse	Best practice mitigation measures for controlling dust/emissions during construction to be implemented through the CEMP.out of A Examples include: use of dust suppression systems; minimising Site runoff of water or mud; fully enclosing Site where possible; maintaining an inspections schedule and monitoring all complaints in a log book.							x	Negligible
Completed Development											
Vehicle emissions from traffic generated as a result of the Development on the local road network	Permanent	Negligible	None required							X	Negligible
Combustion plant emissions.	Permanent	Negligible								X	Negligible
Cumulative Effect											
Construction											

Nuisance from dust deposition and impact from elevated PM_{10} concentrations on human health as a result of other nearby construction sites	Temporary	Negligible	None required							X	Negligible
Operation											
Vehicle emissions from traffic generated as a result of the proposed development on the local road network	Temporary	Negligible	None required							X	Negligible

*** Geographical Level of Importance**

- Vehicle emissions from traffic generated as a result of the Development on the local road network; and
- Combustion plant emissions.

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local

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