

## **5.3 Air Quality**

- 5.3.1 Chapter 10 of the 2013 ES reported the likely significant air quality effects of the development on existing receptors during the construction and operational phase.
- 5.3.2 This Section has been prepared in order to outline the key changes in relation to the Consented Scheme and to identify changes to the findings and conclusions associated with the 2013 ES.

### **Legislation, Planning Policy and Guidance**

- 5.3.3 A review of UK legislation, planning policy and guidance relevant to the proposals has been previously undertaken as part of the 2013 ES, however much of this has been updated in the interim. A description of the current legislative landscape along with policy and guidance is summarised below.

### **Planning Policy Context**

#### **National**

*The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)*

- 5.3.1 The basis of the Air Quality Assessment is formed by the National Air Quality Objectives (NAQOs), a set of limit values for various pollutants that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. The National Air Quality Objectives are set out in the National Air Quality Strategy, as required by the Part IV of the Environment Act (1995). They are grounded on an assessment of the effects of each pollutant on public health and are based on the limit values of EU Clean Air for Europe Act (2008/50/EC), which is transcribed into UK law by the Air Quality Standards Regulations (2010). These remain unchanged from the 2014 ES.

*Clean Air Strategy (2019)*

- 5.3.2 The Government's Clean Air Strategy was launched on the 14<sup>th</sup> January 2019 and sets out a range of initiatives that will help reduce air pollution, providing healthier air to breathe, enhancing the economy and protecting nature. The Clean Air Strategy highlights action to be taken to reduce emissions across all sectors, including transport, the home, farming and industrial sources. This includes actions to reduce particulate matter from domestic emissions, by introducing new legislation to prohibit the sale of the most polluting fuels and ensuring only the cleanest stoves are available for sale by 2022. In addition, the Clean Air Strategy sets out proposals to halve the population living in areas with concentrations of fine particulate matter (PM<sub>2.5</sub>) above the World Health Organisation guideline level of 10µg/m<sup>3</sup> by 2025.

*National Planning Policy Framework (2023)*

- 5.3.3 The National Planning Policy Framework (NPPF) was first published on the 27<sup>th</sup> March 2012 and has been revised in July 2018, February 2019, July 2021 and September 2023. The NPPF outlines the Government's environmental, economic and social policies for England. The NPPF sets out a presumption in favour of sustainable development which should be delivered with three main dimensions: economic; social and environmental (Paragraphs 7, 8 10 and 11). The NPPF aims to enable local people and their councils to produce their own distinctive local and neighbourhood plans, which should be interpreted and applied in order to meet the needs and priorities of their communities.
- 5.3.4 The NPPF states that in the planning system "*Planning policies and decisions should contribute to and enhance the natural and local environment by... e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans*" (Paragraph 174).
- 5.3.5 The NPPF also states that "*Planning policies and decisions 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 and Clean Air Zones, 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. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan*" (Paragraph 186).

*Planning Practice Guidance (NPPG) (2019)*

- 5.3.6 The Planning Practice Guidance (PPG) was launched on 6<sup>th</sup> March 2014 and has undergone regular revision, with the most recent changes to Air Quality in November 2019. It provides additional guidance and interpretation to the Government's strategic policies, outlined within the NPPF, in a web-based resource. This is updated regularly.
- 5.3.7 Matters of relevance to the air quality assessment include:
- The provision of "*guidance on how planning can take account of the impact of new development on air quality*". The PPG provides signposts as to how to address air quality in planning applications and highlights the importance of local plans.
  - The statement that "*The Department for Environment, Food and Rural Affairs carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant Limit Values*" and "*It is important that the potential impact of new development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit*" (Reference ID: 32-001-20191101). The PPG goes on to say that "*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)" (Reference ID: 32-005-20191101).*

- The identification of the content of an air quality assessment, stating clearly that *"Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific"* (Reference ID: 32-007-20191101).

## Local

*'Clearing The Air' – The Mayor's Air Quality Strategy (2010)*

5.3.8 In December 2010, the Mayor of London's Air Quality Strategy was published by the Greater London Authority (GLA). The strategy sets out a framework for delivering improvements to London's air quality and includes measures aimed at reducing emissions from all types of new development, as well as raising awareness of air quality issues and its impacts on health.

*The London Plan (2021)*

5.3.9 The New London Plan was formally published on the 2<sup>nd</sup> of March 2021 and replaces the previous London Plan.

5.3.10 The London Plan 2021 takes an even tougher approach to air quality than its predecessor. The Plan notes that *"Poor air quality is a major issue for London which is failing to meet requirements under legislation. Poor air quality has direct impacts on the health, quality of life and life expectancy of Londoners. The impacts tend to be most heavily felt in some of London's most deprived neighbourhoods, and by people who are most vulnerable to the impacts, such as children and older people. London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced (para 9.1.1). The Mayor is committed to making air quality in London the best of any major world city, which means not only achieving compliance with legal limits for Nitrogen Dioxide as soon as possible and maintaining compliance where it is already achieved, but also achieving World Health Organisation targets for other pollutants such as Particulate Matter (para 9.1.2)".*

5.3.11 This last point is reinforced in Paragraph 9.1.4 which states *"where this policy refers to 'existing poor air quality' this should be taken to include areas where legal limits for any pollutant, or World Health Organisation targets for Particulate Matter, are already exceeded and areas where current pollution levels are within 5 per cent of these limits (para 9.1.4)".* Consequently, while not legal limits on air pollution, air quality assessments within London now require the consideration of the lower WHO targets on PM<sub>10</sub> and PM<sub>2.5</sub>.

5.3.12 Policy SI1 – Improving Air Quality states that:

- *"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 or boroughs' activities to improve air quality.*

- *To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:*
  - *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.*
  - *In order to meet the requirements in Part 1 [three bullet points above], 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 provision 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 should demonstrate that design measures have been used to minimise exposure.*
- *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. To achieve this a statement should be submitted demonstrating:*
  - *how proposals have considered ways to maximise benefits to local air quality, and*
  - *what measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.*
- *In order to reduce the impact on air quality during the construction 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.*
- *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.”.*

5.3.13 The 2021 London Plan is supported by various supplementary London Plan Guidance (LPG) documents, of which ones relating to previous versions of the London Plan are still referred to as Supplementary Planning Guidance (SPGs). Relevant LPGs and those SPGs that are still adopted are discussed in further subsections below.

#### *Housing SPG*

5.3.14 Previous versions of the London Plan were supported by Supplementary Planning Guidance documents (SPGs), some of which have been revoked with the introduction of The 2021 London Plan and others which remain adopted. New supplementary guidance documents to The 2021 London Plan are referred to as London Planning Guidance (LPGs).

5.3.15 The Housing Supplementary Planning Guidance (SPG), published in March 2016 highlights the elements of the London Plan that are relevant to housing development, and where applicable, provides more detail. The SPG states:

5.3.16 *“Air Quality - Standard 5.6.1 (and policy 7.14) – Minimise increased exposure to existing poor air quality and make provision to address local problems of air quality, be at least ‘air quality neutral’ and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas (AQMAs)).*

5.3.17 *LP Policy 7.14 seeks to minimise increased exposure to existing poor air quality and to prevent deterioration of existing poor air quality, including by seeking that new developments are ‘air quality neutral’. Developers should focus on reducing nitrogen oxides (NO<sub>x</sub>) and particulates (PM<sub>10</sub>) from their schemes. During the demolition and construction phase emissions primarily come from the operation of construction vehicles and plant and the generation of dust. During the occupation of residential schemes emissions includes those from vehicles and boilers. Exposure to poor air quality can result from the materials used within the dwelling and poor ventilation as well as external sources such as busy roads and industrial uses. Further guidance will be provided in a revision to the Sustainable Design & Construction SPG.*

5.3.18 *Where schemes cannot have openable windows due to poor air quality, careful consideration needs to be given to the location of air intake units and any increased potential for overheating in the summer due to the reduced opportunities for natural ventilation.”.*

#### *Control of Dust and Emissions from Construction and Demolition SPG*

5.3.19 Published in July 2014, this SPG provides guidance on preparing an Air Quality Statement for construction and demolition activities, specifically in relation to dust risk assessments and helps identify the potential scale of dust emissions for each stage of work. The SPG also provides best practice methods for controlling dust on-site and preventing ‘trackout’, as well as recommendations for dust monitoring.

5.3.20 The SPG also tries to manage emissions of nitrogen oxides (NO<sub>x</sub>) from construction and demolition machinery by means of a new non-road mobile machinery (NRMM) ultra-low emissions zone (ULEZ). For certain types of NRMM, the SPG sets emission standards which must be achieved.

*The RBG Local Plan: Core Strategy with Detailed Policies 2014*

5.3.21 *The Royal Greenwich Local Plan: Core Strategy with Detailed Policies* is the primary planning document of the Royal Greenwich Local Plan. The Core Strategy sets out the spatial strategy, long term spatial vision, spatial objectives and core policies for development within Royal Greenwich to cover the period up until 2028. It is based on the social, economic and environmental objectives of the Greenwich Strategy (Greenwich's Sustainable Community Strategy) together with other relevant plans, programmes and strategies all of which have implications for development and land use within Royal Greenwich.

5.3.22 *Policy E(c) Air Pollution* states that:

5.3.23 *“Development proposals with the potential to result in any significant impact on air quality will be resisted unless measures to minimise the impact of air pollutants are included. Such planning applications should be accompanied by an assessment of the likely impact of the development on air quality.”*

5.3.24 *All new developments with a floor space greater than 500 m<sup>2</sup> or residential developments of 10 or more units are required to reduce carbon dioxide (CO<sub>2</sub>), particulate matter (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>) emissions from transport through the use of measures such as those set out in DEFRA guidance ‘Low Emissions Strategies: using the planning system to reduce transport emissions Good Practice Guidance – January 2010’.*

5.3.25 *Residential development proposals within areas that are currently exposed to air quality concentrations above the National Air Quality Strategy (NAQS) Objectives for particulate matter (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>) should take into account the need to reduce exposure by the following design mitigation hierarchy:*

- *Separation by distance;*
- *External layout;*
- *Internal layout; and*
- *Suitable ventilation.”.*

## **Guidance**

*Land-Use Planning & Development Control: Planning for Air Quality (2017)*

5.3.26 *Land-Use Planning & Development Control: Planning for Air Quality*, jointly published by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) in May 2015 and updated in January 2017, provides general guidance on air quality and planning.

5.3.27 Specifically, the guidance provides details on the scoping of effects, how to assess the impacts in relation to air quality, as well as details on how to assess the significance of impacts.

*London Local Air Quality Management Technical Guidance TG22 (2022)*

5.3.28 Specifically designed to provide technical guidance to Local Planning Authorities (LPAs) in relation to their review and assessment of air quality, TG(22) provides useful guidance in relation to the appropriate methods of air quality modelling and monitoring, which can be as equally useful to the assessment of air quality impacts.

*Guidance on the Assessment of Dust from Demolition and Construction (2024)*

5.3.29 Published in 2014 and revised in 2023 and 2024, the IAQM's Guidance on the Assessment of Dust from Demolition and Construction provides guidance on preparing an Air Quality Statement for construction and demolition activities, specifically in relation to dust risk assessments, as well as providing details on how best to mitigate the impacts of construction dust. Much of the detail within the IAQM's Guidance was adopted within the Control of Dust and Emissions from Construction and Demolition SPG.

*London Atmospheric Emissions Inventory (2019)*

5.3.30 The London Atmospheric Emissions Inventory (LAEI), published in 2013 and updated in 2016 and 2019, includes maps of the Air Quality Focus Areas in London. Air Quality Focus Areas were defined across London in locations where the EU annual mean limit value for NO<sub>2</sub> was exceeded, coupled with a high level of human exposure. These were not designed to be an exhaustive list of London's air pollution hotspots, but locations where the problem was the most acute. The Focus Areas were defined to address concerns raised by boroughs within the LAQM review process and forecasted air pollution trends. There are currently 187 Air Quality Focus Areas across London.

5.3.31 The Focus Areas have been used by GLA, TfL and the Boroughs to inform local air quality management, the development of air quality interventions and the planning process. Under London Local Air Quality Management guidelines, Boroughs are required to have regard to the focus areas in their Borough when devising their Air Quality Action Plans.

*Air Quality and Planning Guidance (2007)*

5.3.32 Written by the London Air Pollution Planning and the Local Environment (APPLE) working group of the London Councils, an umbrella organisation comprising all 32 London Borough and the City of London, the Air Quality and Planning Guidance provides technical advice on how to conduct air quality assessments for planning applications.

5.3.33 Whilst some of this guidance is now out of date, as it has not been updated in line with changes in other guidance documents or policy, the document does still provide useful guidance, especially in relation to detailed dispersion modelling. The guidance also offers advice in relation to determining the significance of exposure to air pollution and the levels of mitigation required.

*World Health Organization Air Quality Guidelines (2021)*

5.3.34 The WHO Air Quality Guidelines propose threshold limits for key air pollutants that pose health risks. The guidelines cover a range of pollutants and suggest threshold levels at which health effects are unlikely to occur, based on the latest scientific evidence. For a number of pollutants, the WHO levels are equivalent to the levels determined by the EU, which were then exacted into the National Air Quality Objectives in the UK; however, the guidelines offer recommended exposure levels for particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) which are lower than the National Air Quality Objectives as set out in the Air Quality Standards Regulations 2010. The WHO Guidelines also provides interim targets for areas of high air pollution.

5.3.35 Since WHO's last 2005 global update, there has been a marked increase of evidence that shows how air pollution affects different aspects of health. For that reason, and after a systematic review of the accumulated evidence, the WHO has adjusted almost all the AQGs levels downwards in 2021.

### **Proposed Non-Material Amendments**

5.3.36 Parking spaces are reduced from the previous application. The 2013 Transport Assessment states that 754 residential parking spaces were to be provided. This is now reduced to 142 spaces which would result in a considerable reduction in the number of vehicle trips anticipated.

### **Assessment Methodology**

5.3.37 The following section outlines the methodologies applied to identify and assess the potential impacts and likely effects to result from the Proposed Development.

#### **Extent of The Study Area**

5.3.38 The study area entails

- The proposed development site
- Any roads within 250 m of the proposed development site
- Any roads that will experience a change in traffic flow as a result of the proposed development
- Any sensitive receptors on those roads, and any sensitive receptors likely to be effected by any emissions from the energy strategy of the proposed development.

5.3.39 For the purposes of verifying any air quality model that may be required, the study area would also entail the location of any nearby air quality monitoring locations and any roads within 250 m of such locations.



## Method of Assessment

### *Demolition & Construction Phase*

5.3.40 No assessment of impacts arising from the construction phase was undertaken in the 2013 ES. The methodology that has been used to carry out this assessment is detailed below in accordance with IAQM Guidance.

5.3.41 To determine the demolition and construction effects of the Proposed Development was based on the IAQM's Guidance on the Assessment of Dust from Demolition and Construction, which provides a risk-based assessment methodology to determine the significance of an air quality impact arising from the construction of a new development, based on the magnitude of change. The methodology provides a five-step approach to determining the significance:

- *“STEP 1 is to screen the requirement for a more detailed assessment. No further assessment is required if there are no receptors within a certain distance of the works.*
- *STEP 2 is to assess the risk of dust impacts. This is done separately for each of the four activities (demolition; earthworks; construction; and trackout) and takes account of:*
  - *the scale and nature of the works, which determines the potential dust emission magnitude (STEP 2A); and*
  - *the sensitivity of the area (STEP 2B).*
  - *These factors are combined in STEP 2C to give the risk of dust impacts.*
  - *Risks are described in terms of there being a low, medium or high risk of dust impacts for each of the four separate potential activities. Where there are low, medium or high risks of an impact, then site-specific mitigation will be required, proportionate to the level of risk.*
  - *Based on the threshold criteria and professional judgement one or more of the groups of activities may be assigned a ‘negligible’ risk. Such cases could arise, for example, because the scale is very small and there are no receptors near to the activity.*
- *STEP 3 is to determine the site-specific mitigation for each of the four potential activities in STEP 2. This will be based on the risk of dust impacts identified in STEP 2. Where a local authority has issued guidance on measures to be adopted at demolition/construction sites, these should also be taken into account. STEP 4 is to examine the residual effects and to determine whether or not these are significant. STEP 5 is to prepare the dust assessment report.”.*

### *Operational Phase*

5.3.42 The assessment of operational phase impacts has been carried out by considering both the conclusions of the assessment in the 2013 ES and the scheme changes discussed above. It is considered that the conclusions of the 2013 ES, namely that there would be no residual significant impacts arising from the operational phase, can be upheld without the need for a detailed assessment.

## Significance Criteria

### Overview

- 5.3.43 The assessment of the potential impacts and likely effects as a result of the Proposed Development has taken into account both the Demolition and Construction phase and Operational phase. The significance level attributed to each effect has been assessed based on the magnitude of change due to the Proposed Development and the sensitivity of the affected receptor/receiving environmental to change.
- 5.3.44 Magnitude of change and the sensitivity of the affected receptor/receiving environmental are both assessed on a scale of high, medium, low and negligible.
- 5.3.45 No assessment of the construction phase was undertaken in the 2013 ES, so the significance criteria for this are discussed below. Although the significance of effects from the operational phase was assessed in the 2013 ES, the significance criteria have since changed with the introduction of the EPUK/IAQM Guidance *Land-Use Planning & Development Control: Planning for Air Quality (2017)*. These new significance criteria are also discussed below.

### Effect Significance

- 5.3.46 The following terms have been used to define the significance of effects identified:
- **Major positive or negative effect** – where the Proposed Development would cause a large improvement (or deterioration) to the existing environment;
  - **Moderate positive or negative effect** – where the Proposed Development would cause a noticeable improvement (or deterioration) to the existing environment;
  - **Minor positive or negative effect** – where the Proposed Development would cause a small improvement (or deterioration) to the existing environment; and
  - **Negligible (i.e. “no significant effect” or “insignificant effect”)** – no discernible improvement or deterioration to the existing environment as a result of the development will occur.

### Construction Phase

- 5.3.47 The IAQM guidance recommends that no assessment of the significance of dust effects is made without mitigation in place, as mitigation is assumed to be secured by industry best practice, planning conditions, legal requirements or required by regulations.
- 5.3.48 With appropriate mitigation in place, the effect of demolition and construction dust emission impacts on air quality is always assessed as not significant. The purpose of the demolition and construction dust assessment is therefore to identify the appropriate level of mitigation to employ.
- 5.3.49 Where increases in traffic flows associated with the demolition and construction phase indicate that a quantitative assessment using dispersion modelling is required, the significance criteria outlined below for operational phase effects are used.

**Operational Phase – Impacts of the Local Area on the Proposed Development**

5.3.50 The assessment of the suitability of a proposed development for residential use entails predicting air quality at the application site, and the significance of this is based on whether the NAQOs for each pollutant are exceeded or not.

**Operational Phase – Impacts of the Proposed Development on the Local Area**

5.3.51 The assessment of the impact of the proposed development on local air quality has used the approach developed by the IAQM/EPUK Guidance. The guidance has produced a matrix which has been used to describe the impacts at individual receptor locations, as shown in **Table 5.3.1** below.

**Table 5.3.1: Impact Descriptors at Individual Receptors**

Long-Term Average Concentration at Receptor in Assessment Year	% Change in Concentrations 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

5.3.52 The impact descriptors are a product of both the absolute pollutant concentration at a given receptor, as well as the change in concentration at the receptor relative to the relevant annual mean air quality objective.

5.3.53 If the annual average pollutant concentration is close to or above the annual air quality objective, marginal changes in magnitude may be determined to be moderate; however if the annual average pollutant concentration is less than 75% of the UK air quality objective level, similar changes in concentration may be determined to be negligible.

5.3.54 IAQM Guidance states that the overall significance of the effect on air quality should be based on professional judgement, taking into account the predicted impacts at the modelled receptor locations and: “...will need to take into account such factors as:

- *The existing and future air quality in the absence of the development;*
- *The extent of current and future population exposure to the impacts; and*

- *The influence and validity of any assumptions adopted when undertaking the prediction of impacts.*”.

5.3.55 The overall significance of the effect on local air quality is a binary judgement, i.e. the overall effect is either significant or it is not significant, and there are no degrees of significance of the overall effect. Moderate, substantial or slight impacts would be considered to be a significant environmental effect.

## **Consultation**

5.3.56 Consideration has been given to the formal EIA Screening Opinion provided by RBG dated 5<sup>th</sup> January 2024 which considered that the application should be provided with an Environmental Statement Addendum, and supporting technical reports as required, of which air quality was one of the topics required therein.

5.3.57 Further consultation has been to obtain trip generation data and details of the energy strategy with the authors of the relevant documents.

## **Assessment of Effects, Mitigation and Residual Effects**

### **Demolition & Construction Phase**

5.3.58 This section identifies and assesses the scale and nature of the main effects arising from the Proposed Development during the construction phase.

#### *First Effect*

5.3.59 The IAQM guidance recommends that no assessment of the significance of dust effects is made without mitigation in place, as mitigation is assumed to be secured by industry best practice, planning conditions, legal requirements or required by regulations.

5.3.60 With appropriate mitigation in place, the effect of construction dust emission impacts on air quality is always assessed as not significant. The purpose of the construction dust assessment is therefore to identify the appropriate level of mitigation to employ.

5.3.61 As per the IAQM *Guidance on the Assessment of Dust from Demolition and Construction* (See Section 1.2.33-35); the proposed development is considered to have a Dust Emission Magnitude of *Small* for demolition, *Small* for earthworks, *Large* for construction and *Small* for trackout. The Sensitivity of the Area is considered to be *High* for dust soiling effects, *Low* for human health effects and *Low* for ecological effects.

5.3.62 Combining the Dust Emissions Magnitude for each activity with the Sensitivity of the Area to each type of effect determines that the Risk of Dust Impacts is *Medium* for demolition, *Low* for earthworks, *High* for construction and *Low* for trackout. As the highest individual impact descriptor is High, the site is considered a *High Risk Site* overall, and a Dust Management Plan is therefore highly recommended. The IAQM recommendations for mitigation for all high risk sites, as well as activity specific mitigation for each activity, are presented below.

### Mitigation

5.3.63 The IAQM's Guidance states that the following measures are highly recommended or desirable as mitigation for all high risk sites:

- Communications: Develop and implement a stakeholder communications plan that includes community engagement before work commences – Highly Recommended.
- Communications: Display the name and contact details of person(s) accountable for air quality and dust issues on the Site boundary – Highly Recommended.
- Communications: Display the head or regional office contact information – Highly Recommended.
- Communications: Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the LPA. 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. In London, 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 PM<sub>10</sub> continuous monitoring and/or visual inspections – Highly Recommended.
- Site management: Record all dust and air quality complaints, identify the cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken – Highly Recommended.
- Site management: Make the complaints log available to the local authority when asked – Highly Recommended.
- Site management: 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 – Highly Recommended.
- Site management: 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 – Highly Recommended.
- 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 the LPA when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of Site boundary, with cleaning to be provided if necessary - Highly Recommended.
- Monitoring: Carry out regular Site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked– Highly Recommended.
- Monitoring: 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 – Highly Recommended.

- Monitoring: Agree on dust deposition, dust flux, or real-time PM<sub>10</sub> continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on-site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction. – Highly Recommended. Preparing and maintaining the Site: Plan Site layout so that machinery and dust causing activities are located away from receptors, as far as is possible – Highly Recommended.
- Preparing and maintaining the Site: Erect solid screens or barriers around dusty activities (or the Site boundary) that are at least as high as any stockpiles on-site – Highly Recommended.
- Preparing and maintaining the Site: Fully enclose Site or specific operations where there is a high potential for dust production and the Site is active for an extensive period– Highly Recommended.
- Preparing and maintaining the Site: Avoid Site runoff of water or mud– Highly Recommended.
- Preparing and maintaining the Site: Keep Site fencing, barriers and scaffolding clean using wet methods – Highly Recommended.
- Preparing and maintaining the Site: Remove materials that have a potential to produce dust from Site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below – Highly Recommended.
- Preparing and maintaining the Site: Cover, seed or fence stockpiles to prevent wind whipping – Highly Recommended.
- 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 standards, where applicable– Highly Recommended.
- Operating vehicle/machinery and sustainable travel: Ensure all vehicles switch off engines when stationary - no idling vehicles – Highly Recommended.
- Operating vehicle/machinery and sustainable travel: Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable – Highly Recommended.
- Operating vehicle / machinery and sustainable travel: 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) - Highly Recommended.

- Operating vehicle/machinery and sustainable travel: Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials – Highly Recommended.
- Operating vehicle/machinery and sustainable travel: Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing) – Highly Recommended.
- 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 system – Highly Recommended.
- Operations: Ensure an adequate water supply on the Site for effective dust / particulate matter suppression/mitigation, using non-potable water where possible and appropriate – Highly Recommended.
- Operations: Use enclosed chutes and conveyors and covered skips – Highly Recommended.
- Operations: Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate – Highly Recommended.
- Operations: 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 – Highly Recommended.
- Waste management: Avoid bonfires and burning of waste materials – Highly Recommended.

5.3.64 The IAQM's Guidance states that the following measures are highly recommended or desirable as mitigation for all Medium risk sites in relation 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) – Desirable.
- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground – Highly Recommended.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives – Highly Recommended.
- Bag and remove any biological debris or damp down such material before demolition – Highly Recommended.

5.3.65 The IAQM's Guidance does not state any measures that are highly recommended or desirable as mitigation for low risk sites in relation to earthworks.

5.3.66 The IAQM's Guidance states that the following measures are highly recommended or desirable as mitigation for all Medium risk sites in relation to construction:

- Avoid scabbing (roughening of concrete surfaces) if possible - Desirable. 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 – Highly Recommended.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent the escape of material and overfilling during delivery – Desirable.
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust - Desirable.

5.3.67 The IAQM's Guidance states that the following measures are highly recommended or desirable as mitigation for all Low risk sites in relation to trackout:

- 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 – Desirable.
- Avoid dry sweeping of large areas – Desirable.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport – Desirable.
- Record all inspections of haul routes and any subsequent action in a site log book – Desirable.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable) – Desirable.

#### Residual Effect

5.3.1 The site is considered a “*High Risk Site*” overall and a Dust Management Plan is recommended incorporating a number of specific mitigation measures based on the site-specific risks.

5.3.2 As per the IAQM Guidance, with risk appropriate mitigation, residual effects will be considered not significant.

#### **Operational Phase**

5.3.3 This section identifies and assesses the scale and nature of the main effects arising from the Proposed Development during the operational phase.



First Effect

- 5.3.4 The 2013 ES found that the proposed development would not lead to significant adverse air quality effects at any of the receptors modelled within the development scenario, either from emissions associated with an increase in road traffic or arising from the proposed energy centre.
- 5.3.5 Parking spaces are reduced from the previous application. The 2013 Transport Assessment states that 754 residential parking spaces were to be provided. This is now reduced to 142 spaces which would result in a considerable reduction in the number of vehicle trips anticipated.
- 5.3.6 It is known that background air pollutant concentrations have decreased since the 2013 ES, as reflected in the Defra background maps and local air quality monitoring data.
- 5.3.7 It is known that emissions factors for the UK fleet have decreased since the 2013 ES as a reflection of cleaner engine technologies, uptake of alternative fuel vehicles, and reaction to policies such as the congestion charge and ultra-low emissions zone.
- 5.3.8 The Energy Statement prepared by Hodkinson indicates that heating and cooling for the proposed development will be provided by air source heat pumps which do not give rise to onsite emissions. It is therefore considered that there would be no adverse air quality effects at nearby sensitive receptors arising from the energy strategy.
- 5.3.9 As a consequence of the above, it is considered that the conclusion of the 2013 ES that the development would not lead to significant adverse air quality effects would be upheld for the proposed development.

Mitigation

- 5.3.10 There will not be a significant increase in pollutant concentrations as a consequence of road traffic emissions or emissions associated with the energy strategy, therefore mitigation is not necessary.

Residual Effect

- 5.3.11 No significant residual effects.

## **Cumulative Effects**

### Effect

5.3.12 The 2013 ES Chapter on Air Quality concluded that there would be significant air quality effects arising from the development in cumulation with other schemes in the area. Since the 2013 ES, several of the schemes considered have been completed and would now be considered part of the baseline, while other proposed cumulative projects have been brought forward for consideration.

5.3.13 Trip generation data for the proposed cumulative schemes has not been provided at this stage. However, given that the proposed development entails a reduction in car parking and trip generation over the consented outline, it is considered that any contribution from the proposed development to any cumulative effects would be reduced compared to the consented outline, and therefore the conclusion of no significant effects is still likely to be the case.

### Mitigation

5.3.14 There will not be a significant increase in pollutant concentrations as a consequence of the proposed development in cumulation with other schemes in the area, therefore mitigation is not necessary.

### Residual Effect

5.3.15 No significant residual effects.

## **Limitation and Assumptions**

5.3.16 The conclusions of this assessment are largely predicated on the conclusions of the 2013 ES Chapter on Air Quality, and is therefore subject to the same limitations and assumptions that would accompany any air quality modelling.

5.3.17 There are various elements that contribute to uncertainty in modelled pollutant concentrations. The software used is internationally recognised and has been used to create a model that has been validated against real world pollutant concentrations data, however no computer-based model is able to replicate real world conditions in their entirety.

5.3.18 The model used in the assessment requires input data in many forms, each of which will have inherent uncertainty associated with them. Model uncertainty was assessed in the 2013 ES Chapter.

5.3.19 Air pollutant concentration data has been obtained from monitoring reports published by the RBG. It has been assumed that the results have been reported correctly and that instrumentation has been calibrated.

5.3.20 The baseline vehicle flows used in the model are taken from the Department for Transport, some of which are manual counts and some of which are estimated based on manual counts from previous years.

- 5.3.21 The change in vehicle flows used in the model are based on a worst-case interpretation of the Development parameters. The increase in vehicle flows were provided by the project's Transport Consultant, calculated based on the worst-case interpretation of the Development area schedule, i.e. those use classes with the highest trip generation rates.
- 5.3.22 The air quality modelling used background data, monitoring data, meteorological data and traffic data to verify the model, each of which are subject to their own inherent uncertainties.
- 5.3.23 The modelling assumed a level Site that does not account for terrain effects. Similarly, the roads modelled are considered free of street canyon effects.

### **Summary & Conclusions**

- 5.3.24 This Chapter provides an assessment of possible air quality impacts relative to the previous air quality assessment carried out for the 2013 ES. Assessments of several environmental effects have been carried out, namely the effects of dust during the construction phase (including dust disamenity effects, human health effects, and ecological effects) and the effects of air pollutant emissions during the operational phase (including road traffic effects and building emissions effects).
- 5.3.25 It has been concluded that with appropriate mitigation in the form of a Dust Management Plan, there will be no residual significant dust disamenity effects, human health effects nor ecological effects as a consequence of the Proposed Development.
- 5.3.26 It has been concluded that there will be no significant effects arising from the operational phase of the Proposed Development resulting from either road traffic impacts or building emissions impacts.
- 5.3.27 Given that the Proposed Development entails a reduction in trip generation over the previous consent, it is therefore considered that the conclusions of the cumulative assessment in the 2013 ES with regards to air quality still hold, namely that there will be no significant air quality effects arising from the Proposed Development.

## References

- UK Public General Acts (1995). *UK Environment Act 1995, Part IV*
- European Environment Agency (2008). *Directive 2008/50/EC, air quality*
- UK Statutory Instruments (2010). *The Air Quality Standards Regulations 2010*
- Defra (2019). *Clean Air Strategy 2019*
- Department for Levelling Up, Housing & Communities (2023). *National Planning Policy Framework*
- Department for Levelling Up, Housing & Communities (2023). *Planning practice guidance*
- Greater London Authority (2010). *Clearing the air - The Mayor's Air Quality Strategy*
- Greater London Authority (2021). *The London Plan*
- Greater London Authority (2016). *Housing Supplementary Planning Guidance*
- Greater London Authority (2016). *The Control of Dust and Emissions from Construction and Demolition SPG*
- Royal Borough of Greenwich (2014). *The Royal Greenwich Local Plan: Core Strategy with Detailed Policies*
- IAQM/EPUK (2017). *Land-Use Planning & Development Control: Planning for Air Quality*
- Defra (2022). *London Local Air Quality Management Technical Guidance TG22 (2022)*
- IAQM (2023). *Guidance on the Assessment of Dust from Demolition and Construction (2023)*
- Greater London Authority (2019). *London Atmospheric Emissions Inventory (2023)*
- The London Air Pollution Planning and the Local Environment (APPLE) working group (2007). *Air Quality and Planning Guidance*
- World Health Organisation (2021). *WHO global air quality guidelines*