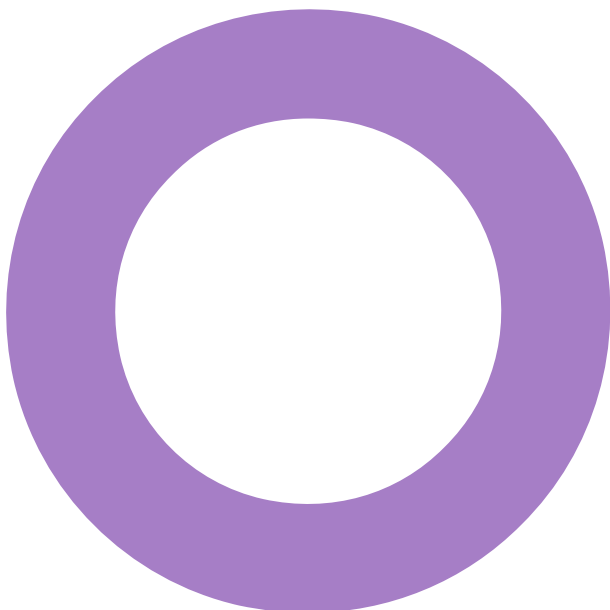


**Scours Lane.
Reading.**
Cube Advisors Ltd.

AIR QUALITY
AIR QUALITY ASSESSMENT

REVISION 00 – 16 FEBRUARY 2022



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	16/02/2022	First Draft	ED	LB	KW

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Project number: 10/13826

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Contents.

Audit sheet.	2
Contents.	3
Executive Summary.	5
1. Introduction.	6
1.1 Proposed Development.	6
1.2 Application Site Description and Location.	6
1.3 Scope of Assessment.	7
2. Legislation, Policy and Guidance Documents.	8
2.1 Air Quality Strategy and Local Air Quality Management.	8
2.2 EU Limit Values.	9
2.3 General Nuisance Legislation.	9
2.4 UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations.	9
2.5 Clean Air Strategy.	9
2.6 Planning Policy.	9
2.7 Local Policy.	11
2.8 Local Air Quality Management in RBC.	13
2.9 Assessment Guidance.	13
2.9.1 Defra	13
3. Assessment Methodology.	14
3.1 Consultation.	14
3.2 Existing Air Quality in the Study Area.	14
3.3 Construction Phase Impacts.	14
3.4 Operational Phase Impacts.	15
3.5 Assessment of Significance.	15
4. Baseline Environment.	17
4.1 Site Setting.	17
4.2 Local Air Quality Management Review and Assessment.	17
4.3 Local Air Quality Monitoring.	18
4.4 Industrial Pollution.	20
4.5 Defra Predicted Concentrations.	20
4.6 Summary of Background Data.	21
5. Construction Phase Assessment.	22

5.1 Construction Phase Dust Assessment.	22
5.2 Construction Phase – Vehicular Pollutants.	24
5.3 Construction Phase – Non-Road Mobile Machinery.	25
6. Operational Phase Assessment.	26
6.1 Road Traffic Emissions Screening Assessment.	26
6.2 Combustion Plant Screening Assessment.	28
6.3 Site Suitability.	28
7. Mitigation.	30
7.1 Construction Phase.	30
7.2 Operational Phase.	32
8. Summary and Conclusions.	33
9. Glossary of Terms.	34
References.	35
Appendix 1 - EHO Consultation.	36
Appendix 2 - Professional Experience.	38

Executive Summary.

Hoare Lea has been commissioned by Cube Advisors Ltd to undertake an Air Quality Assessment in support of a planning application for the proposed construction of a new retail drive through pod (Use Classes E(b) & Sui Generis), including car parking, landscaping and access arrangement on land at Scours Lane, Reading (the 'Application Site').

The Proposed Development includes a new access from Scours Lane, and erection of 167.22 m² drive through restaurant with a hot food take away facility, landscaping, external seating and 22 car parking spaces. The restaurant will include a small sales area with display units, servery and seating, accommodating approximately 20 eat-in covers, back of house space for storing, preparing and producing goods to be sold, and staff facilities. The anticipated split of customers is approximately 20% eat in, 50% drive through and 30% take away. The end user of the Proposed Development will be Greggs.

The design will comprise a single storey construction with fenestration to the west and north and the drive through path located to the south of the building. The external works incorporate new pedestrian links to existing foot paths along Oxford Road and a new connection to the industrial park to the north. Landscaping proposals including new trees are provided to enhance the green environment and wildlife on the site. The proposals also incorporate outdoor eating.

The baseline assessment shows that the Application Site is located within Reading Air Quality Management Area (AQMA), declared for exceedance of the annual mean nitrogen dioxide (NO₂) Air Quality Objective (AQO). Data from the one automatic monitoring station in vicinity of the Application Site indicates that there have been no exceedances of the annual mean or short term AQOs for NO₂ or fine particulate matter (PM₁₀) between 2015 and 2019. There were no exceedances of the annual mean NO₂ AQO at any of the nearby passive diffusion tube monitoring locations in 2019. However, between 2015 and 2018, there were exceedances of the annual mean NO₂ AQO at four roadside diffusion tube locations but no expected exceedances of the 1-hour mean NO₂ AQO. No pollutant releases to air have been reported from any nearby industrial or waste management sources in the last five years.

A review of local air quality monitoring data in close proximity to the Application Site indicates that pollutant concentrations are below the relevant AQOs. Therefore, the Application Site is considered suitable for restaurant use without the need for additional mitigation.

The traffic generated by the Proposed Development as supplied by Milestone Transport Planning, the project Transport Consultants, has been screened against the criteria set-out in the Environmental Protection United Kingdom (EPUK) and Institute of Air Quality Management (IAQM) planning guidance to determine the need for a detailed assessment. This showed that the potential impact of additional road traffic on local air quality is considered insignificant where there are relevant receptors, and a detailed assessment is not required.

Energy provision for the Proposed Development will be provided by an all-electric approach through the use of Air Source Heat Pumps (ASHPs) and will not involve any on-site combustion processes or release of combustion emissions during normal operation. As such, the air quality impact from the energy provision of the Proposed Development is not expected to be significant and a detailed assessment is not required.

The impacts of demolition and construction work on dust soiling and ambient fine particulate matter concentrations have been assessed. This identified that there is a medium risk of dust soiling impacts and a low risk of increases in particulate matter concentrations due to construction activities.

The risk of dust causing a loss of local amenity and increased exposure to fine particulate matter concentrations has been used to identify appropriate mitigation measures. Provided these are implemented and included within a dust management plan, for example through a planning condition, the residual impacts are considered to be not significant.

Based on the assessment results, the Application Site is considered suitable for the Proposed Development without the inclusion of mitigation, air quality should not be considered as a constraint to the planning consent and the Proposed Development conforms to the principles of the National Planning Policy Framework and the Reading Borough Council (RBC) Local Plan.

1. Introduction.

Hoare Lea has been commissioned by Cube Advisors Ltd. to undertake an Air Quality Assessment in support of a planning application for the proposed construction of a new retail drive through pod (Use Classes E(b) & Sui Generis), including car parking, landscaping and access arrangement on land at Scours Lane, Reading (the 'Application Site').

1.1 Proposed Development.

The Proposed Development includes a new access from Scours Lane, and erection of 167.22 m² drive through restaurant with a hot food take away facility, landscaping, external seating and 22 car parking spaces. The restaurant will include a small sales area with display units, servery and seating, accommodating approximately 20 eat-in covers, back of house space for storing, preparing and producing goods to be sold, and staff facilities. The anticipated split of customers is approximately 20% eat in, 50% drive through and 30% take away. The end user of the Proposed Development will be Greggs.

The design will comprise a single storey construction with fenestration to the west and north and the drive through path located to the south of the building. The external works incorporate new pedestrian links to existing foot paths along Oxford Road and a new connection to the industrial park to the north. Landscaping proposals including new trees are provided to enhance the green environment and wildlife on the site. The proposals also incorporate outdoor eating.

1.2 Application Site Description and Location.

The Application Site is located within Reading Borough Council's (RBC's) administrative area at the approximate National Grid Reference (NGR): X 468581, Y 174286.

The Application Site is located adjacent to the A329 Oxford Road/Scours Lane junction, located approximately 3 km to the west of Reading town centre and approximately 2.3 km north east of the centre of Tilehurst village. The Application Site is bound by the A329 Oxford Road to the south, Scours Lane to the west, industrial units accessed from Stadium Way to the north and grassland to the east. A visual representation of the Application Site boundary is shown in Figure 1.

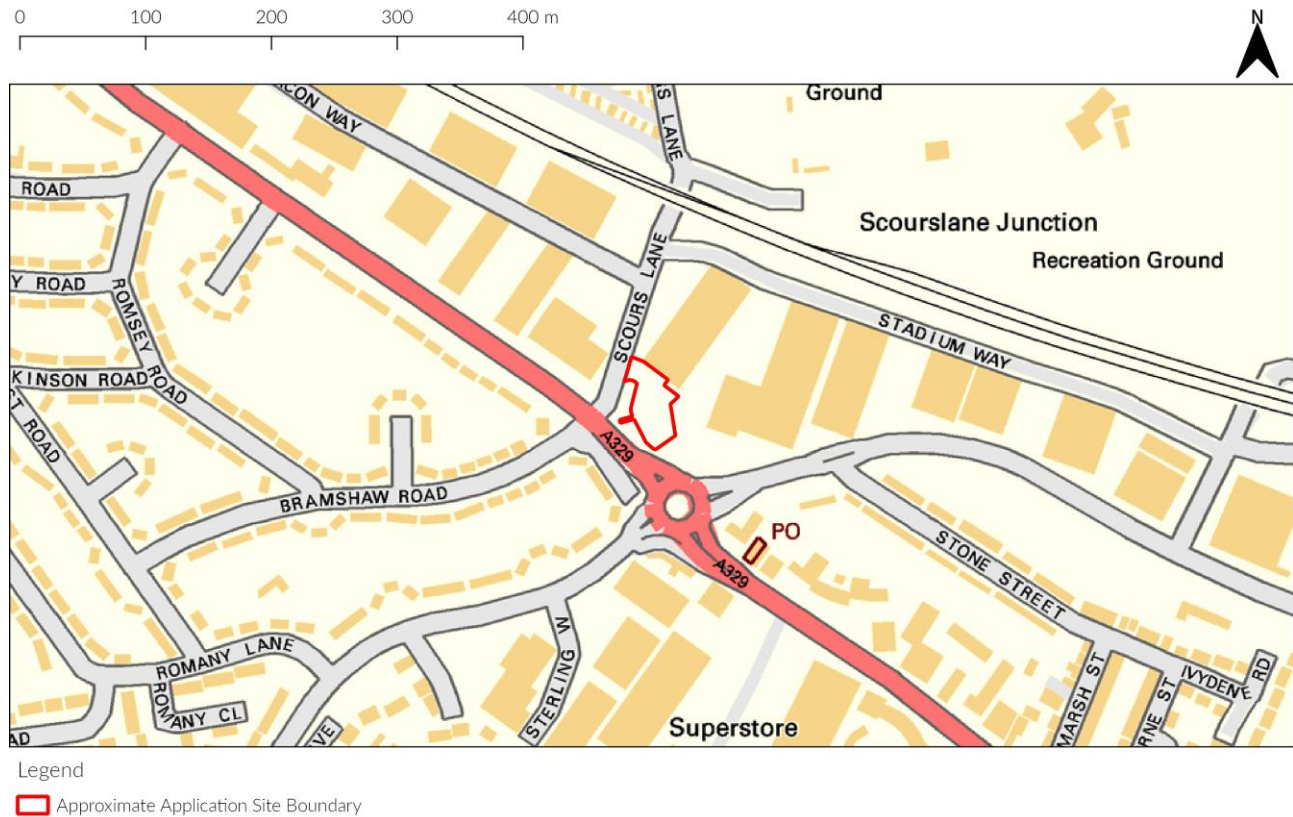


Figure 1: Location of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

1.3 Scope of Assessment.

A phone call to discuss the proposed methodology for the Air Quality Assessment took place with Ross Jarvis, Senior Environmental Health Officer (EHO) for RBC on the 9th February 2022. An agreement on the proposed methodology was reached and a copy of the correspondence with RBC to confirm the details of this call has been included in Appendix 1.

A summary of the scope of the assessment includes:

- Determination of baseline scenario, using RBC monitoring data;
- Assessment of potential air quality impacts during the construction phase;
- Assessment of potential air quality impacts during the operational phase;
- Assessment of the suitability of the Application Site for the Proposed Development; and
- Identification of required mitigation measures.

2. Legislation, Policy and Guidance Documents.

2.1 Air Quality Strategy and Local Air Quality Management.

The Environment Act 1995 (Part IV)¹ requires the Secretary of State to publish an air quality strategy and local authorities to review and assess the quality of air within their boundaries. The latter has become known as Local Air Quality Management (LAQM).

The Air Quality Strategy² provides the policy framework for local air quality management and assessment in the UK. It sets out air quality standards and objectives for key air pollutants. These standards and objectives are designed to protect human health and the environment. The Strategy also sets out how the different sectors of industry, transport and local government, can contribute to achieving these Air Quality Objectives (AQOs).

Local authorities are required to identify whether the objectives have been, or will be, achieved at relevant locations. If the objectives are not achieved, the authority must declare an Air Quality Management Area (AQMA) and should prepare an Air Quality Action Plan (AQAP) within 12 months. The action plan must identify appropriate measures and policies that can be introduced to help achieve the objective(s).

The AQOs set out the extent to which the Government expects the standards to be achieved by a certain date. They take account of economic efficiency, practicability, technical feasibility and timescale. The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations 2000³, and the Air Quality (England) (Amendment) Regulations 2002⁴.

The objectives for nitrogen dioxide (NO₂) and fine particulate matter (PM₁₀ and PM_{2.5}) are given in Table 1. The target dates for meeting the NO₂ and PM₁₀ objectives were 2005 and 2004, respectively. It should be noted that local authorities in England have a flexible role in working towards reducing emissions and concentrations of PM_{2.5}.

Table 1: Air Quality Objectives for NO₂, PM₁₀ and PM_{2.5}

Pollutant	Time Period	Objective
Nitrogen Dioxide (NO ₂)	1-hour Mean	200 µg/m ³ Not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m ³
Fine Particulate Matter (PM ₁₀) [†]	24-hour Mean	50 µg/m ³ Not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m ³
Fine Particulate Matter (PM _{2.5}) ^{†*}	Annual Mean	25 µg/m ³
<u>Notes:</u> [†] Measured gravimetrically.		

The objectives apply at locations where members of the public are likely to be regularly present and exposed over the averaging period of the objective. Examples of where the annual mean objectives should apply are provided in Local Air Quality Management Technical Guidance (LAQM.TG(16))⁵ and include building facades of residential properties, schools, hospitals. The annual mean objectives are not relevant for the building facades of offices or other places of work where members of the public do not have regular access, nor kerbsides nor gardens.

The 24-hour objective for PM₁₀ is considered to apply at the same locations as the annual mean objective, as well as in gardens of residential properties and at hotels.

The 1-hour objective for NO₂ also applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations, pavements of busy shopping streets, carparks and bus stations which are not fully enclosed. The 1-hour objective does not apply at kerbside sites where the public do not have regular access.

2.2 EU Limit Values.

The European Union has also set limit values for NO₂, PM₁₀ and PM_{2.5}; these are legally binding and have been implemented into English legislation by The Air Quality Standards Regulations 2010⁶ and The Air Quality Standards (Amendment) Regulations 2016⁷.

The limit values for NO₂, PM₁₀ and PM_{2.5} are the same as the English objectives (given in Table 1), but applied from 2010 for NO₂, 2005 for PM₁₀ and 2015 for PM_{2.5}. The limit values apply at all locations (apart from where the public does not have access, where health and safety at work provisions apply and on the road carriageway).

2.3 General Nuisance Legislation.

Part III of the Environmental Protection Act (EPA) 1990 (as amended) contains the main legislation on Statutory Nuisance and allows local authorities and individuals to take action to prevent a statutory nuisance. Section 79 of the EPA defines, amongst other things, smoke, fumes, dust and smells emitted from industrial, trade or business premises so as to be prejudicial to health or a nuisance, as a potential Statutory Nuisance.

Fractions of dust greater than 10 µm in diameter (i.e. greater than PM₁₀) typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the Air Quality Strategy. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.

2.4 UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations.

The UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations⁸ was published in 2017. This sets out roles and responsibilities and measures for bringing NO₂ levels within the mandatory limit values in the shortest possible time. Under the UK Plan, local authorities with roadside concentrations of NO₂ forecast by the Defra as exceeding legal limits are identified; RBC has been identified as one of these.

2.5 Clean Air Strategy.

The Clean Air Strategy (CAS)⁹, published in 2019, sets out the Government's proposals aimed at delivering cleaner air in England, and also indicates how devolved administrations intend to make emissions reductions. It sets out the comprehensive action that is required from across all parts of government and society to deliver clean air.

2.6 Planning Policy.

2.6.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) 2021¹⁰ sets out planning policy for England. It includes advice on when air quality should be a material consideration in development control decisions. Relevant sections are set out below:

Paragraph 55: "Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition."

Paragraph 104: "...c) opportunities to promote walking, cycling and public transport use are identified and pursued; d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account - including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains... ."

Paragraph 105: "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."

Paragraph 174: "Planning policies and decisions should contribute to and enhance the natural and local environment by: 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."

Paragraph 185: “Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.”

Paragraph 186: “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 188: “The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.”

The NPPF is supported by Planning Practice Guidance (PPG)¹¹.

The PPG states that:

Paragraph 001 (Reference ID: 32-001-20191101): “Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance relevant Limit Values. It is important that the potential impact of new development on air quality is taken into account in planning where the national assessment indicates that relevant limits have been exceeded or are near the limit or where the need for emissions reductions has been identified.”

Paragraph 002 (Reference ID: 32-002-20191101): Plans may need to consider ways in which the development could be made appropriate in locations where air quality is or is likely to be a concern, and not give rise to unacceptable risks from pollution. This could, for example entail identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable”.

Paragraph 005 (Reference ID: 32-005-20191101): “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.

The PPG also sets out the information that may be required in an air quality assessment, stating that:

Paragraph 007 (Reference ID: 32-007-20191101): “Assessments need to be proportional 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. The scope and content of supporting information is best discussed and agreed between the local planning authority and applicant before it is commissioned”.

It also provides guidance on options for mitigating air quality impacts, and makes clear that:

Paragraph 008 (Reference ID: 32-008-20191101): “Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact.”

2.7 Local Policy.

2.7.1 Reading Borough Local Plan

The Reading Borough Local Plan¹² was adopted on 4th November 2019. This document sets out the planning policies for development in Reading up to 2036 and is the main consideration in decisions regarding planning applications.

The following policies relating to air quality are contained within the Local Plan.

Policy CC8. Safeguarding Amenity

"Development will not cause a detrimental impact on the living environment of existing residential properties or unacceptable living conditions for new residential properties, in terms of:

[...]

- Dust and fumes;*
- Smell*

[...]

The position of habitable rooms, windows and outdoor living spaces will be particularly important. A back-to-back distance of 20 metres between dwellings is usually appropriate, although the circumstances on individual sites may enable dwellings to be closer without a detrimental effect on privacy.

As well as immediate impacts, other aspects to which this policy applies will include matters such as hours of operation of businesses, and effects of traffic movements, particularly of heavy goods vehicles (HGVs). Proposals which would generate regular movements of HGVs on residential roads will not be acceptable.

Where an otherwise acceptable development could change its character to a use that would have a greater impact on amenity without needing planning permission, conditions will be applied to restrict such changes."

Policy CC9. Securing Infrastructure

"Proposals for development will not be permitted unless infrastructure, services, resources, amenities or other assets lost or impacted upon as a result of the development or made necessary by the development will be provided through direct provision or financial contributions at the appropriate time. Employment development should provide mitigation measures in line with its impacts on labour and skills and on the transport network.

[...]

Other measures, as follows, should also be considered where a specific need is identified and justified:

[...]

- Measures to tackle poor air quality or for on-going air quality monitoring"*

Policy EN15. Air Quality

"Development should have regard to the need to improve air quality and reduce the effects of poor air quality.

i. Development that would detrimentally affect air quality will not be permitted unless the effect is to be mitigated. The following criteria should be taken into account:

- Whether the proposal, including when combined with the cumulative effect of other developments already permitted, would worsen air quality;*
- Whether the development is within, or accessed via, an Air Quality Management Area; and*

- *Whether it can be demonstrated that a local worsening in air quality that would not detrimentally affect human health or the environment would be offset by an overall improvement in air quality, for instance through reduction in the need to travel.*
- ii. *Where a development would introduce sensitive uses (such as residential, schools and nurseries, hospitals, care facilities) into, or intensify such uses within, an Air Quality Management Area, detrimental effects on that use will be mitigated. Mitigation measures should be detailed in any planning application. If there are significant detrimental effects that cannot be mitigated, the application should be refused.*
- iii. *Where required, planning obligations will be used to secure contributions to measures to tackle poor air quality or for air quality monitoring.”*

Policy CR6. Living in Central Reading

“Proposals for residential development within the central area will be assessed against the following criteria:

[...]

ii. *Proposals for new residential development within the central area will be required to demonstrate how the issue of potential noise disturbance from neighbouring land uses and other sources, and air quality implications of residential development, have been considered and if necessary, mitigated. New residential development should not be located next to existing town centre uses where those uses would give rise to unacceptable levels of noise and disturbance to the occupiers of the new scheme, unless this can be mitigated.*

[...]”

2.7.2 Reading Transport Strategy 2036

The Reading Transport Strategy 2036¹³ (2020) is currently in draft form but once published formerly, will be a statutory document to set out the plan for developing Reading’s transport network up to 2036 and beyond. It will include the guiding policies and principles, alongside schemes and initiatives to be delivered, to enable RBC to achieve its overall vision for a step-change in sustainable travel choices in Reading.

The following policies relating to air quality are contained within the draft Transport Strategy.

Policy RTS2. The Environment and Climate Change

“[...]

2.2. We will ensure transport schemes deliver improved air quality, reduced emissions and biodiversity net gains.

[...]”

Policy RTS13. Healthy Streets

“13.1. We will encourage the creation of healthy streets in Reading, to improve air quality, reduce congestion and help make our communities healthier, greener and more attractive places to live, work, learn and play.

[...]”

Policy RTS14. Walking and Cycling

“[...]

14.1. We will integrate the LCWIP into cross departmental strategies to maximise the benefits of walking and cycling, including improved health and wellbeing, air quality, reduced emissions and to create a more attractive local environment.

[...]”

2.8 Local Air Quality Management in RBC.

In 2006, RBC declared six AQMA's which were revoked in 2009 and replaced by a single AQMA (Reading AQMA) covering all perceived and observed areas of exceedances of the AQOs.

RBC have produced an AQAP¹⁴ to set out the local measures intended to help achieve compliance with the AQOs. The actions within the AQAP are split into two key areas: Intervention and Education/Promotion.

2.9 Assessment Guidance.

The primary guidance documents consulted in undertaking this assessment are detailed below.

2.9.1 Defra Local Air Quality Management Technical Guidance

The Defra LAQM.TG(16)⁵ was published for use by local authorities in their LAQM review and assessment work. The document provides key guidance in aspects of air quality assessment, including screening, use of monitoring data, and use of background data that are applicable to all air quality assessments.

2.9.2 EPUK-IAQM 'Air Quality Guidance for Planning'

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have published guidance¹⁵ to help ensure that air quality is properly accounted for in the development control process. It clarifies when an air quality assessment should be undertaken, what it should contain, and how impacts should be described and assessed including guidelines for assessing the significance of impacts.

2.9.3 IAQM 'Construction and Demolition Dust Guidance'

Guidance on the assessment of dust from demolition and construction has been published by the IAQM¹⁶. The guidance provides a methodology to determine the dust emission magnitude and provides a series of matrices to determine the risk magnitude of potential dust sources associated with construction activities. This allows for the identification of appropriate mitigation measures that are defined within further IAQM guidance.

3. Assessment Methodology.

3.1 Consultation.

The approach to the assessment, as described in section 1.3, was discussed with RBC by phone call on 9th February 2022. An agreement on the methodology of the air quality assessment was reached and a copy of the correspondence with RBC to confirm the details of this call has been included in Appendix 1.

3.2 Existing Air Quality in the Study Area.

A baseline air quality review was undertaken to determine the existing air quality in the vicinity of the Application Site. This desk-top study was undertaken using the following sources:

- Air quality data for RBC including a review of the RBC air quality reports and local monitoring data;
- The UK Pollutant Release and Transfer Register¹⁷;
- Background pollution maps taken from Defra's LAQM website¹⁸;
- Pollution Inventory from the Environment Agency¹⁹
- The UK Ambient Air Quality Interactive Map²⁰;
- Ordnance Survey data and aerial photography from Google Maps.

3.3 Construction Phase Impacts.

3.3.1 Construction Dust Assessment

The assessment of construction dust impacts has been undertaken in line with the LAQM methodology. Activities on the proposed construction site have been divided into three types to reflect their different potential impacts. These are:

- Earthworks;
- Construction; and
- Trackout

The Application Site area is currently unoccupied. As such, there are no anticipated demolition works required before construction begins and therefore no assessment of the risk of dust emissions from demolition works is required.

The risk of dust emissions was assessed for each activity with respect to:

- Potential loss of amenity due to dust soiling; and
- The risk of health effects due to a significant increase in exposure to PM₁₀.

The first stage of the assessment involves screening to determine whether there are any sensitive receptors within the threshold distances defined by the LAQM guidance. A detailed assessment of the impact of dust from construction sites will be required where:

- A 'human receptor' is located within 350 m of the boundary of the Application Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Application Site entrance;
- An 'ecological receptor' is located within 50 m of the boundary of the Application Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Application Site entrance.

The magnitude of dust emission for each activity is determined on the basis of the guidance, indicative thresholds, information available relating to the project and expert judgement. The risk of dust effects arising is based upon the relationship between the dust emission magnitude and the sensitivity of the area. The risk of impact is then used to determine the mitigation requirements.

Descriptors for magnitude of impact and impact significance used in this assessment of construction phase dust are given in the guidance¹⁶ available online.

3.3.2 Construction Traffic

3.3.2.1 Construction Traffic Emissions Screening

A screening assessment has been undertaken with reference to the following EPUK and IAQM guidance indicative criteria:

- a change of Light Duty Vehicle (LDV) flows of more than 100 AADT (within an AQMA); and/or
- a change of Heavy Duty Vehicle (HDV) flows of more than 25 AADT (within an AQMA).

3.3.2.2 NRMM Emissions Screening

Non-Road Mobile Machinery (NRMM) refers to mobile machines, transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads. NRMM emissions have been screened following the guidance in Defra's LAQM.TG(16)⁵.

3.4 Operational Phase Impacts.

3.4.1 Road Traffic Impacts

The screening assessment has been undertaken with reference to the following documents:

- Defra's LAQM.TG(16)⁵; and
- EPUK and IAQM guidance indicative criteria, i.e.:
 - a change of LDV flows of more than 100 AADT (within an AQMA); and/or
 - a change of HDV flows of more than 25 AADT (within an AQMA).

Where these criteria are exceeded, a detailed assessment is required, although the guidance advises that "the criteria provided are precautionary and should be treated as indicative", and "it may be appropriate to amend them on the basis of professional judgement".

Where impacts can be screened out there is no need to progress to a more detailed assessment.

3.4.2 Combustion Plant Screening of Impacts

Energy provision for the Proposed Development will be provided by an all-electric approach through the use of Air Source Heat Pumps (ASHPs) and will not involve any on-site combustion processes or release of combustion emissions during normal operation²¹. As such, the air quality impact from the energy provision of the Proposed Development is not expected to be significant and a detailed assessment is not required.

3.4.3 Site Suitability Assessment

A qualitative Site Suitability Assessment has been undertaken to consider the exposure of future occupants, introduced by the Proposed Development, to current air quality.

Site Suitability will be assessed qualitatively using monitoring data local monitoring data from RBC, as well as background concentration maps produced by Defra.

3.5 Assessment of Significance.

3.5.1 Construction Phase Impacts

The IAQM guidance¹⁶ on the assessment of dust from demolition and construction states that the primary aim of the risk assessment is to identify site specific mitigation that, once implemented, should ensure that there will be no significant effect. Therefore, the assessment has been used to determine an appropriate level of mitigation for the construction phase.

The determination of which mitigation measures are recommended include elements of professional judgement and the professional experience of the consultants preparing this report is set out in Appendix 2.

3.5.2 Operational Phase Impacts

The EPUK and IAQM guidance¹⁵ has been used to assess the potential for significant impacts as a result of vehicle emissions from traffic associated with the Proposed Development. The focus of the guidance is to assess traffic emission impacts and advises on how to describe the air quality impacts and their significance.

3.5.3 Significance of Effect – Site Suitability

To determine the significance of predicted air quality impacts based upon a Site Suitability Assessment, the EPUK/IAQM guidance states:

“Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means.”

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4. Baseline Environment.

This section sets out the available information on air quality in the vicinity of the Application Site.

4.1 Site Setting.

The Application Site is located within RBC's administrative area at the approximate NGR: X 468581, Y 174286.

The Application Site is located adjacent to the A329 Oxford Road/Scours Lane junction, located approximately 3 km to the west of Reading town centre and approximately 2.3 km north east of the centre of Tilehurst village. The Application Site is bound by the A329 Oxford Road to the south, Scours Lane to the west, industrial units accessed from Stadium Way to the north and grassland to the east.

4.2 Local Air Quality Management Review and Assessment.

A review of RBC's most recent Annual Status Report²² (2020) has shown that NO₂ concentrations are generally falling across RBC and in 2019, there were no automatic monitoring stations that recorded an exceedance of the annual mean NO₂ AQO, and only three passive diffusion tube monitoring locations that indicated an exceedance of the annual mean NO₂ AQO. There were no recorded exceedances of the AQOs for PM₁₀ and PM_{2.5} between 2015 and 2019.

RBC have not yet published a 2021 Annual Status Report containing monitoring data from 2020. However, pollutant concentrations recorded at monitoring stations in 2020 are not considered to be representative of "normal" air quality conditions due to government-imposed lockdowns impacting traffic flows. Whilst it is expected that as a result of the COVID-19 pandemic that behaviours will change in the future, the impact of this on air quality long-term is currently unknown.

The Application Site is located within Reading AQMA, declared for exceedance of the annual mean NO₂ AQO.

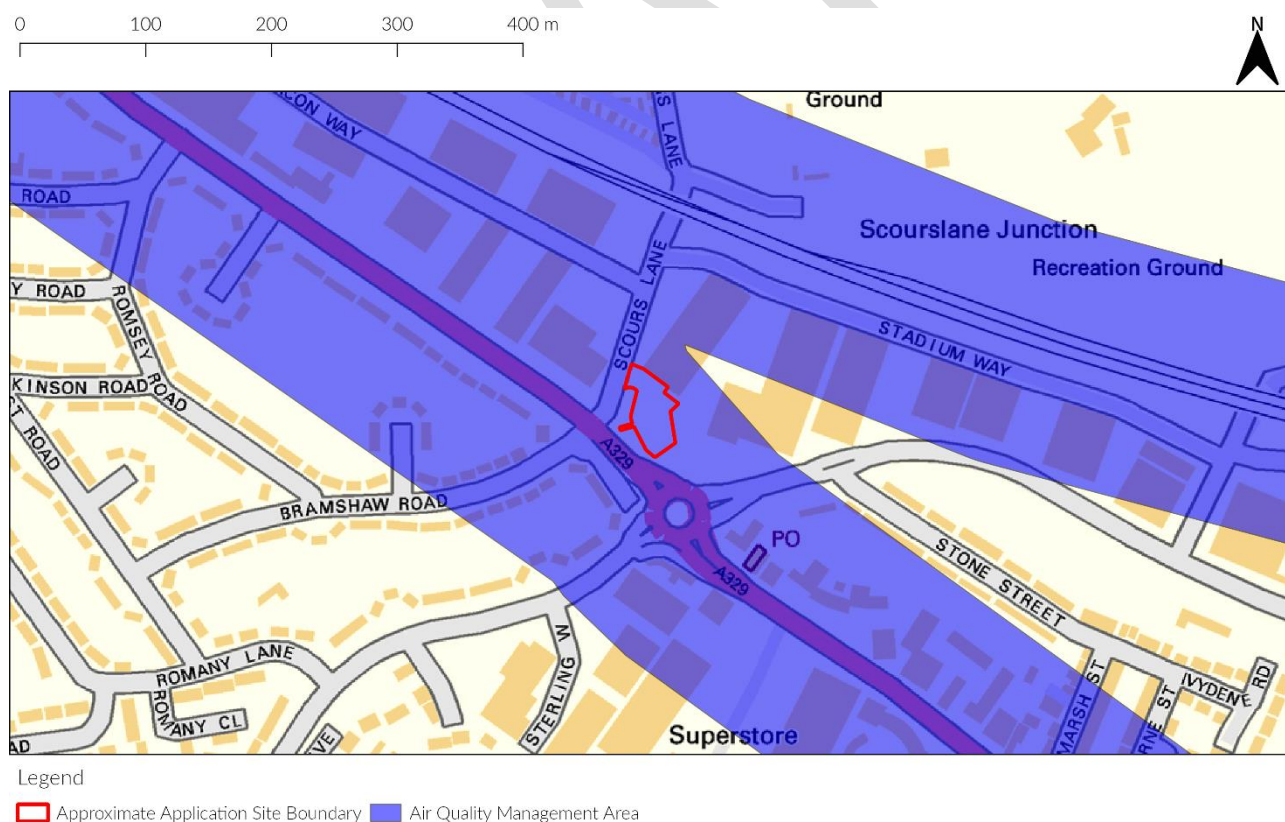


Figure 2: Application Site Boundary and AQMA. Contains OS Data © Crown Copyright and Database rights 2022.

4.3 Local Air Quality Monitoring.

The UK Automatic Urban and Rural Network (AURN) is a countrywide network of air quality monitoring stations operated on behalf of Defra. Monitoring data for AURN sites is available from the UK Air Information Resource website (UK-AIR). The closest AURNs to the Application Site are Reading New Town (UKA00462) and Reading London Road (UKA00620), both located approximately 5 km to the south east of the Application Site.

Oxford Road automatic monitoring station is the closest automatic monitoring station to the Application Site. It is a roadside monitor located approximately 165 m to the south east of the Application Site and is likely to represent conditions at the Application Site more accurately than either of the two AURNs mentioned above. As such, data from the Oxford Road automatic monitoring station has been included in this assessment.

Recent monitoring data from 2015 to 2019 for Oxford Road automatic monitoring station is detailed in Table 2 and a visual representation of the location of this automatic monitoring station is shown in Figure 3.

Table 2: Automatic Monitoring Locations

Monitoring site and distance (m) from site boundary (approx.)	Objective	2015	2016	2017	2018	2019
NO₂						
Oxford Road, Roadside, 165m	Annual mean (µg/m ³)	31	30	28	28	26
	Number of hours with concentrations >200 µg/m ³	0	0	1	0	0
PM₁₀						
Oxford Road, Roadside, 165m	Annual mean (µg/m ³)	23	22	21	23	21
	Number of days with concentrations > 50 µg/m ³	7	3	8	2	11

The monitoring results indicate that there have been no exceedances of the annual mean AQOs for NO₂ and PM₁₀. In addition, regarding the short term AQOs, the 1-hour mean NO₂ AQO, nor the 24-hour mean PM₁₀ AQO were exceeded between 2015 and 2019.

In 2019, RBC also operated 60 passive diffusion tubes to monitor NO₂ concentrations. A review of the most recent monitoring data available indicated that there are eight passive diffusion tube monitoring locations within the vicinity of the Application Site. Recent monitoring results are shown in Table 3 and the passive diffusion tube monitoring locations are illustrated in Figure 3.

Table 3 details the monitoring results for all passive diffusion tube monitoring locations for the most recent years available.

Table 3: Passive Diffusion Tube Monitoring Results

Site ID	Site Type	Distance (km) from site (approx.)	Annual Mean NO ₂ Concentration (µg/m ³)*				
			2015	2016	2017	2018	2019
306 Tilehurst Rd/Water Rd	Roadside	1.2	34	32	32	31	30

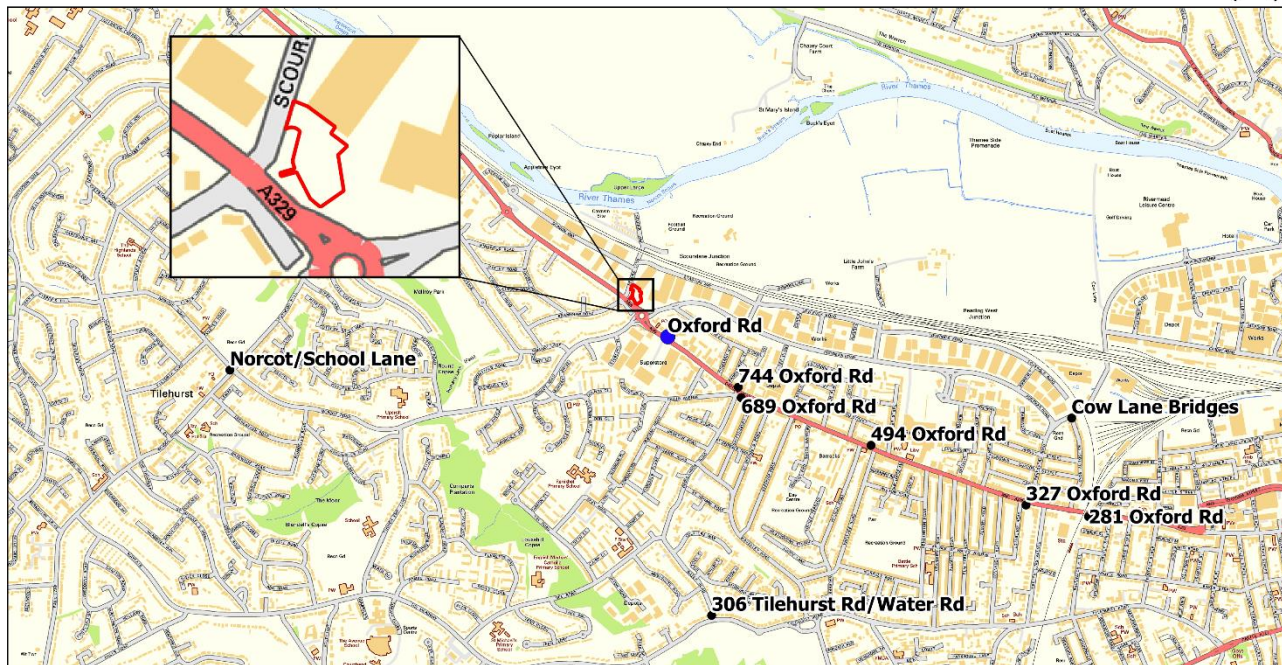
Site ID	Site Type	Distance (km) from site (approx.)	Annual Mean NO ₂ Concentration (µg/m ³)*				
			2015	2016	2017	2018	2019
689 Oxford Rd	Roadside	0.5	40	40	41	37	35
744 Oxford Rd	Roadside	0.5	47	46	42	47	39
494 Oxford Rd	Roadside	1.0	35	37	32	35	29
Cow Lane Bridges	Kerbside	1.7	31	32	33	29	34
327 Oxford Rd	Roadside	1.7	43	40	40	39	34
281 Oxford Rd	Roadside	1.9	45	44	45	42	36
Norcot/School Lane	Roadside	1.5	28	28	29	26	-

*Concentrations in bold indicate exceedance of the annual mean NO₂ AQO.

As shown in Table 3 above there were no exceedances of the annual mean NO₂ AQO at any nearby passive diffusion tube monitoring locations in 2019, the most recent year with available and representative monitoring data. However, between 2015 and 2018, there have been exceedances of the annual mean NO₂ AQO at four out of the eight nearby passive diffusion tube monitoring locations. These were all in roadside locations.

Additionally, an annual mean NO₂ concentration of 60 µg/m³ or above is often used to indicate a possible exceedance of the 1-hour mean NO₂ AQO. No passive diffusion tube monitoring locations within the vicinity of the Application Site have recorded an NO₂ concentration of above 60 µg/m³ between 2015 and 2019, and therefore no exceedance of the 1-hour mean NO₂ AQO is likely.

0 250 500 750 1,000 m



Legend

Approximate Application Site Boundary Automatic Monitoring Location Passive Diffusion Tube Monitoring Location

Figure 3: Monitoring Locations in the vicinity of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

4.4 Industrial Pollution.

A desk-based review of potential industrial sources using the UK Pollutant Release and Transfer Register¹⁷ and the Pollution Inventory from the Environment Agency¹⁹ identified two industrial or waste management sources of air pollution that are likely to affect the Application Site with regard to air quality. No pollutant releases to air have been reported from any of these sources in the last five years and therefore they are unlikely to have a significant impact on air quality at the Application Site.

Table 4: Industrial and Waste Sources of Air Pollution in the Vicinity of the Application Site

Facility	Activity at Facility	Approximate Distance from Application Site (km)
Reading Inorganic Chemical Plant	Manufacture of other inorganic basic chemicals	0.6
R Collard Limited	Treatment and disposal of non-hazardous waste	1.9

4.5 Defra Predicted Concentrations.

The background concentrations have been obtained from the national maps published by Defra¹⁸. These estimated concentrations are produced on a 1 km by 1 km grid basis for the whole of the UK. The Application Site falls into grid square X 468500 Y 174500 and the predicted concentrations for this grid square for NO₂, PM₁₀ and PM_{2.5} are provided in Table 5 for 2019, the most recent year with available monitoring data and for 2022, the anticipated opening year for the Proposed Development.

Table 5: Predicted Background Concentrations

Year	Predicted Background Concentration (µg/m³)		
	NO ₂	PM ₁₀	PM _{2.5}
2019	16.4	15.3	10.7
2022	14.8	14.6	10.2

As shown in Table 5, background concentrations are below the relevant AQOs for all pollutants.

4.6 Summary of Background Data.

The Application Site is located withing Reading AQMA.

The automatic monitoring station results indicate that there have been no exceedances of the annual mean AQOs for NO₂ and PM₁₀. In addition regarding the short term AQOs, the 1-hour mean NO₂ AQO, nor the 24-hour mean PM₁₀ AQO were exceeded between 2015 and 2019.

There were no exceedances of the annual mean NO₂ AQO at any nearby passive diffusion tube monitoring locations in 2019. However, between 2015 and 2018, there were exceedances of the annual mean NO₂ AQO at four roadside locations out of the seven nearby passive diffusion tube monitoring locations. There were no predicted exceedances of the 1-hour mean NO₂ AQO at any of the nearby passive diffusion tube monitoring locations between 2015 and 2019.

No pollutant releases to air have been reported from any nearby industrial or waste management sources in the last five years.

Defra background concentrations are below the relevant AQOs for all pollutants.

5. Construction Phase Assessment.

The potential for air quality impacts during the construction of the Proposed Development are assessed in this section.

5.1 Construction Phase Dust Assessment.

The risk of dust impacts is based on the potential dust emissions magnitude and the sensitivity of the area. These two factors are then combined to determine the risk of dust impacts with no mitigation applied. In the absence of any site-specific information, a higher risk category has been applied to represent a worst-case scenario.

5.1.1 Assessment Screening

There are 'human receptors' within 350 m of the Application Site but no designated habitat sites within 50 m of the Application Site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Site entrance. The closest ecological receptor to the Application Site is McIlroy Park Local Nature Reserve, located approximately 530 m to the west of the Application Site.

Therefore, an assessment of construction dust on ecological receptors can be screened out from this assessment but an assessment of construction dust at human receptors is required.

5.1.2 Potential Dust Emission Magnitude

The potential magnitude of dust emissions from earthworks, construction and trackout have been assessed, as identified in Table 6.

Table 6: Predicted Magnitude of Dust Emissions

Activity	Magnitude	Justification
Earthworks	Medium	The soil type is loamy ²³ which is a moderately dusty soil type. The total Application Site Area is expected to be less than 2500 m ² . Due to the soil type being moderately dusty, the magnitude of dust emissions as a result of earthworks is classified as medium, in line with IAQM guidance.
Construction	Small	Construction activities will consist of a single storey construction with fenestration to the west and north. The area of construction of the drive through pod is 167.22 m ² , as stated by Greggs. As such, the construction volume is expected to be approximately 870 m ³ and therefore the magnitude of dust emissions as a result of construction activities is classified as small, in line with IAQM guidance.
Trackout	Medium	Information on traffic movements anticipated during construction works was unavailable for the completion of the Air Quality Assessment. However, the development quantum is not anticipated to result in a significant increase in movements above the EPUK and IAQM criterion. The length of unpaved roads is expected to be between 50 m and 100 m and therefore the magnitude of dust emissions as a result of trackout is classified as medium, in line with IAQM guidance.

5.1.3 Sensitivity of the Study Area

The sensitivity of the area takes into account the following factors:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;
- In the case of PM₁₀, the local background concentration; and
- Site-specific factors, such as whether there are natural shelters, such as trees or other vegetation, to reduce the risk of wind-blown dust.

The sensitivity of the area and the factors considered are detailed in Table 7.

Table 7: Sensitivity of the Area

Sensitivity Type	Factors	Sensitivity of Area	
		On – Site Activity	Trackout
Dust Soiling	Within 50 m of the Application Site are between 10 and 100 industrial/commercial properties, which are classed as medium sensitivity receptors. Within 100 m of the Application Site are further industrial/commercial properties and between 10 and 100 high sensitivity receptors, consisting of residential dwellings and car parking spaces. For trackout, the distances are measured from the side of the roads used by construction traffic, up to 50 m from small sites. There are fewer than 10 high sensitivity receptors within 20 m of the road network extending 50 m from the site, both north and south along Oxford Road (A329), which are the likely construction routes to be used by construction traffic.	Low	Medium
Human Health	Oxford Road automatic monitoring station recorded a PM₁₀ concentration of 21 µg/m³ in 2019. The Defra predicted background concentrations for PM₁₀ in the relevant 1 km by 1 km grid square in which the Application Site is located are 15.3 µg/m³ in 2019 and 15.3 µg/m³ in 2022. As such PM₁₀ concentrations in the locale of the Proposed Development are below 24 µg/m³. There are fewer than 100 high sensitivity receptors within 20 m of the Application Site boundary. As such, the sensitivity of the area in regard to human health impacts is classified as low. For trackout, the distances are measured from the side of the roads used by construction traffic, up to 50 m from small sites. There are fewer than 10 high sensitivity receptors within 20 m of the road network extending 50 m from the site, both north and south along Oxford Road (A329), which are the likely construction routes to be used by construction traffic.	Low	Low

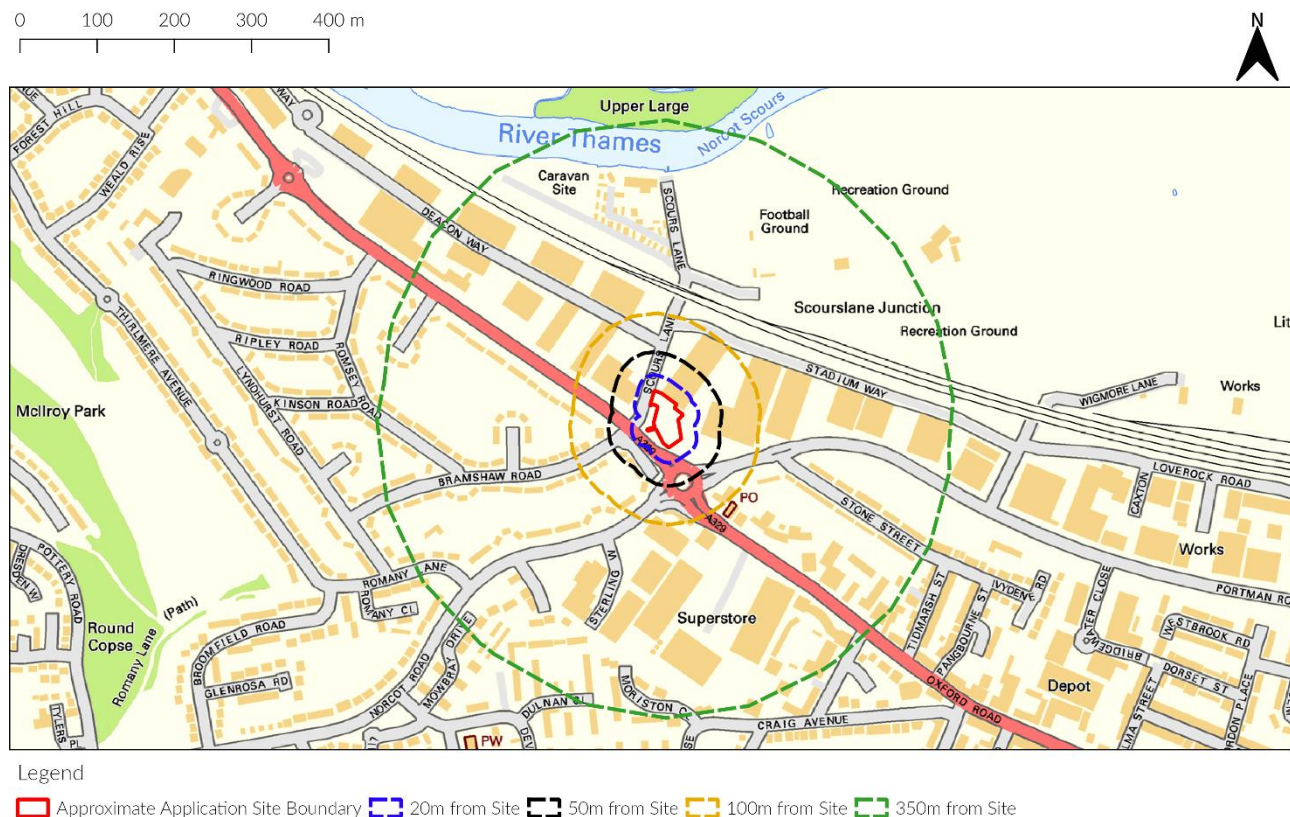


Figure 4: Distance band criteria from the Application Site boundary. Contains Ordnance Survey Data © Crown Copyright 2022.

5.1.4 Risk of Dust Impacts

The outcomes of the assessments of potential magnitude of dust emissions and the sensitivity of the area are combined to determine the risk of impact. This risk is then used to inform the selection of appropriate mitigation. Table 8 details the risk of dust impacts for earthworks, construction and trackout activities.

Table 8: Summary of Potential Unmitigated Dust Risks

Potential Impact	Sensitivity	Earthworks	Construction	Trackout
Magnitude		Medium	Small	Medium
Dust Soiling Impacts	Low/ Medium	Low Risk	Negligible	Low Risk
Human Health Impacts	Low	Low Risk	Negligible	Negligible

5.2 Construction Phase – Vehicular Pollutants.

The Application Site is located within Reading AQMA and therefore the lower screening criterion (i.e. 100 LDV and 25 HDV) would apply.

Information on traffic movements anticipated during construction works was unavailable for the completion of the Air Quality Assessment. However, the development quantum is not anticipated to result in a significant increase in movements above the EPUK and IAQM criterion. The duration of movements will be short-term in nature and are not considered further within the context of this assessment. Therefore, in accordance with the criterion presented within EPUK and IAQM guidance, additional road vehicle trips during the construction phase of the Proposed Development “can be considered to have insignificant effects” on air quality.

5.3 Construction Phase – Non-Road Mobile Machinery.

Exhaust emissions of NO_x and fine particulate matter (PM₁₀ and PM_{2.5}) from Non-Road Mobile Machinery (NRMM), associated with construction sites, may have a significant effect on local air quality. Typically, NRMM is and, therefore there is a potential for NRMM emissions to adversely affect local air quality as a result of the Proposed Development.

LAQM.TG(16)⁵ guidance states that, with the application of suitable control measures and site management, exhaust emissions from on-site NRMM are “unlikely to make a significant impact on local air quality. In the vast majority of cases they will not need to be quantitatively assessed”.

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6. Operational Phase Assessment.

The potential for air quality impacts during the operation of the Proposed Development are assessed in this section.

6.1 Road Traffic Emissions Screening Assessment.

Milestone Transport Planning, the appointed Transport Consultants for the project have estimated the number of new vehicle trips as a result of the Proposed Development as 208 vehicles, with 1 % HDVs, broken down by LDV and HDV in Table 9.

As the Application Site is located within an AQMA, EPUK/IAQM indicative criteria for the possibility of impacts to air quality of an increase of more than 100 LDVs and/or 25 HDVs on the local road network are applicable.

Table 9: New trip distribution (AADT)

Road	Trip Distribution	LDV	HDV
Scours Lane	100%	206	3
Oxford RD north of Scours Lane	12%	25	1
Oxford RD south of Scours Lane (W of roundabout)	88%	182	2
Oxford RD south of Scours Lane (E of roundabout)	19%	40	1
Norcott Rd	19%	40	1
Wigmore Lane	50%	103	1

There is monitoring along Oxford Road, as detailed in Section 4. Exceedances of the annual mean NO₂ AQO have been recorded between 2015 and 2018. However, the increase in traffic along the section of Oxford Road (east of the roundabout) where the exceedances have been recorded is well below the EPUK/IAQM indicative criteria, and as shown in the above Table 9, the impacts of road traffic on air quality are expected to be insignificant here.

None of the roads in the surrounding road network will experience an uplift in HDVs of more than 25 AADT as a result of the Proposed Development. The greatest increase in HDV movements is expected on Scours Lane where a maximum increase of 3 HDVs is predicted. This is well below the EPUK/IAQM guidance.

As can be seen in Table 9, there are 3 links where the new trips are greater than 100 LDVs, and as such the EPUK/IAQM indicative criteria is exceeded. These links are shown on Figure 5.

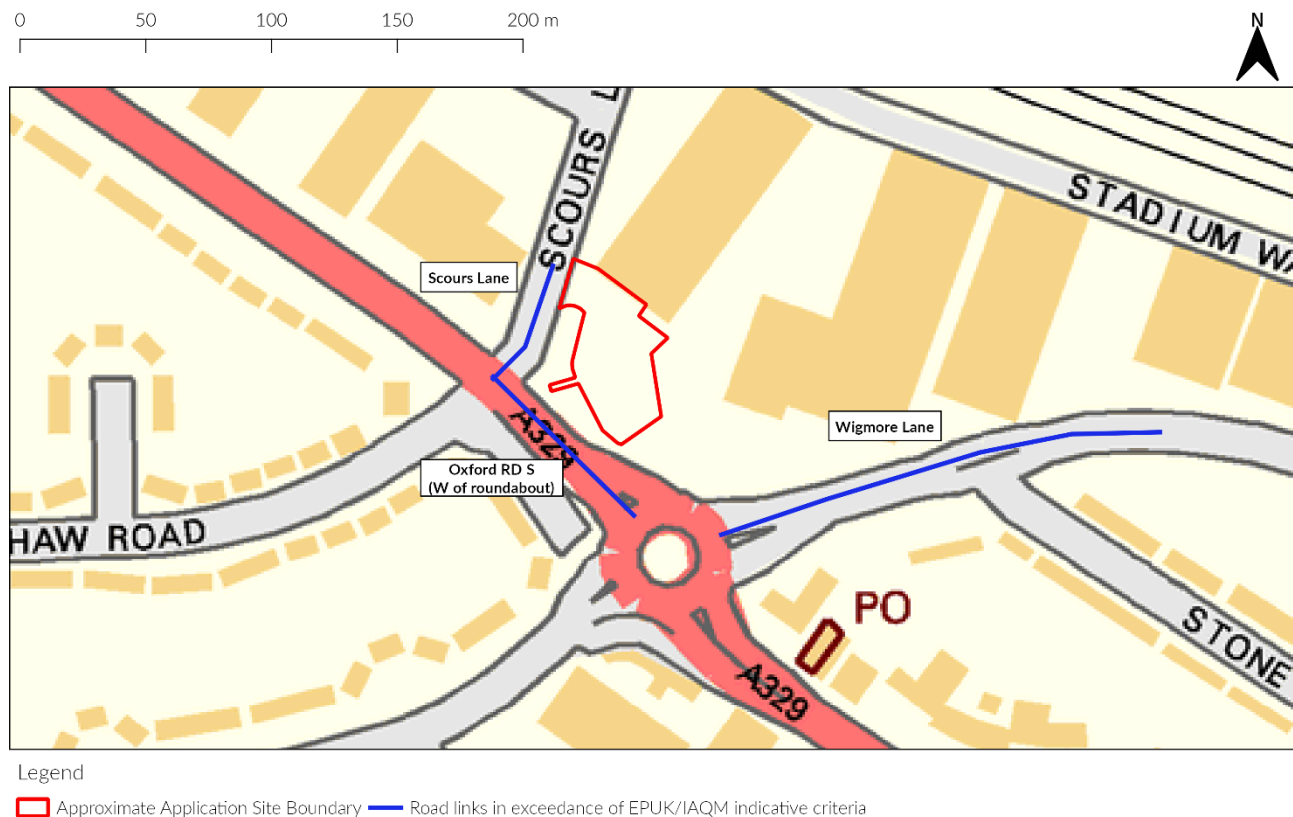


Figure 5: Road links where new trips are in exceedance of the EPUK/IAQM indicative criteria. Contains Ordnance Survey Data © Crown Copyright 2022.

An increase of more than 100 LDVs is expected on Scours Lane, Oxford Road (west of the roundabout where Oxford Road meets Norcott Road/Wigmore Lane), and on Wigmore Lane.

On Scours Lane, there is an expected increase of 206 LDVs. However, there are no highly sensitive receptors such as residential dwellings, located along Scours Lane, and the industrial buildings on Scours Lane are set back from the road by at least 5 m. As such, it is not expected that additional vehicles will increase pollutant concentrations by 1% of the short term AQO at these receptors, which would constitute a slight adverse impact in line with EPUK/ IAQM significance criteria. Therefore, it is expected that any change in concentration would be negligible.

The closest monitoring location to the road links where new trips are in exceedance of the EPUK/IAQM indicative criteria is Oxford Road automatic station. Oxford Road automatic station is set back approximately 6 m from the roadside and between 2015 and 2019, the maximum and minimum NO₂ concentrations were 31 µg/m³ and 26 µg/m³ respectively. The highest concentration was recorded in 2015, and the lowest in 2019. The highest NO₂ concentration from 2015 is 78% of the Air Quality Assessment Level (AQAL). As such, in order for increases in NO₂ concentrations to be classed as moderate or above in line with EPUK/IAQM criteria, the increase in the NO₂ concentrations relative to the AQAL would need to be at least 6%. This is considered unlikely to occur as a result of the Proposed Development. As such, in order for increases in NO₂ concentrations at sensitive receptors (set back from the road by at least 6 m), to be classed as moderate or above, the increase in NO₂ concentrations relative to the AQAL would also need to be at least 6%. Again, this is considered unlikely to occur as a result of the Proposed Development.

On an approximately 75 m section of Oxford Road, between Scours Lane and west of the roundabout where Oxford Road meets Norcot Road/Wigmore Lane, there is an expected increase of 181 LDVs. Although there are residential dwellings located along this stretch of Oxford Road, the residential dwellings are set back from the road by at least 20 m. Due to their distance from the road, it is expected that pollutants will have dispersed and

these sensitive receptors will not experience significant increases in pollutant concentrations as a result of road traffic emissions associated with Proposed Development.

On Wigmore Lane, there is an expected increase of 103 LDVs. Although there are residential dwellings located on Stone Street close to Wigmore Lane, the residential dwellings are set back from Wigmore Lane by at least 15 m. Due to their distance from the road, these sensitive receptors will not experience significant increases in pollutant concentrations as a result of road traffic emissions associated with Proposed Development.

At Oxford Road automatic monitoring station, in order for increases in NO₂ concentrations to be classed as moderate or above in line with EPUK/IAQM criteria, the increase in the NO₂ concentrations relative to the AQAL would need to be at least 6%. Given that the nearest sensitive receptors to the road links where new trips are in exceedance of the EPUK/IAQM indicative criteria are set back from the roadside by 15 m or more, an increase in NO₂ concentrations above the EPUK/IAQM criteria is even less likely to occur as a result of the Proposed Development at these locations.

The impacts on air quality from operational phase traffic generation are therefore considered to be not significant and a detailed assessment is not required.

6.2 Combustion Plant Screening Assessment.

Energy provision for the Proposed Development will be provided by an all-electric approach through the use of ASHPs and will not involve any on-site combustion processes or release of combustion emissions during normal operation. As such, the air quality impact from the energy provision of the Proposed Development is not expected to be significant and a detailed assessment is not required.

6.3 Site Suitability.

This section presents a review of RBC monitoring data in the vicinity of the Application Site, for the purpose of identifying the suitability of the Application Site for commercial/restaurant use and identify any requirements for potential mitigation to be embedded into the Proposed Developments design.

As presented in section 2 in line with LAQM.TG(16)⁵, the 1-hour mean AQO applies to the Proposed Development due to its proposed use as a restaurant. As such, this section considers the predicted 1-hour mean NO₂ concentrations at the Application Site.

6.3.1 NO₂ Concentrations

A review of the annual mean NO₂ concentrations monitored within the vicinity of the Application Site has been completed as part of the baseline review with recent monitoring results, presented in Table 3.

The Application Site is set back slightly (approximately 5 m) from the Oxford Road (A329) roadside. Oxford Road automatic monitoring station is located on Oxford Road, the closest main A-road the Application Site. In addition, Oxford Road automatic monitoring station has a similar orientation in relation to Oxford Road as the Application Site and is therefore considered to most closely represent it. Between 2015 and 2019, Oxford Road automatic monitoring station recorded no exceedances of the 1-hour mean NO₂ AQO.

Passive diffusion tubes 744 Oxford Road and 689 Oxford Road are also located on Oxford Road. However, the passive diffusion tube monitoring locations are situated in a more built-up environment where dispersion is likely to be worse than at the Application Site and at Oxford Road automatic station, so are not considered to be as representative of conditions at the Application Site, but are still relevant.

An annual mean NO₂ concentration of 60 µg/m³ or above is often used to indicate a possible exceedance of the 1-hour mean NO₂ AQO. The passive diffusion tube monitoring locations 744 Oxford Road and 689 Oxford Road, although in a more built-up area than the Application Site, have still recorded no NO₂ concentrations in exceedance of 60 µg/m³ between 2015 and 2019. As such, exceedance of the 1-hour mean NO₂ AQO is unlikely.

For 2019, the most recent year with available monitoring data and for 2022, the anticipated opening year for the Proposed Development, the Defra predicted background concentrations for NO₂ are 16.4 µg/m³ and 14.8 µg/m³ respectively. As the predicted annual mean NO₂ concentrations are well below of 60 µg/m³ for both years, no exceedances of the 1-hour mean NO₂ AQO are likely in the locale of the Proposed Development.

Therefore, NO₂ concentrations in the locale of the Proposed Development are considered to be below the 1-hour mean NO₂ AQO and the Application Site is considered suitable for commercial/restaurant use.

6.3.2 Significance of Air Quality Impacts

To determine the significance of predicted air quality impacts based upon a site-suitability assessment, such as that undertaken as part of this assessment, the EPUK & IAQM guidance states:

“Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means.”

With regards to the Proposed Development, the unmitigated impact significance associated with the Proposed Development has been predicted in accordance with the stated assessment methodology. The following factors have been considered when providing justification:

- The Proposed Development will not introduce any new receptor into an area of exceedance of the 1-hour mean NO₂ AQO based upon a review of NO₂ monitoring data and Defra predicted background concentrations within the development locale.

As no exceedances of the considered AQO is predicted, mitigation measures are not required for the operational phase of the Proposed Development. As such, the overall effect is considered to be ‘not significant’.

7. Mitigation.

7.1 Construction Phase.

To mitigate the potential impacts during the construction phase it is recommended that mitigation measures as detailed in the IAQM guidance are implemented. These mitigation measures have been carefully selected for the Proposed Development and are based upon the dust risk categories outlined in Table 8 of this report.

It is recommended that RBC approve a Dust Management Plan (DMP) prior to works commencing on site. Table 10 below details the measures that should be incorporated in the DMP. For general mitigation measures, which excludes those specifically targeted towards earthworks, construction and trackout (which are given towards the end of the table), low risk measures have been applied as these represent the highest risk category determined in Table 8. This approach is consistent with the IAQM guidance.

Table 10: Mitigation Measures

Issue	Mitigation Measure
	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.
Dust Management Plan	Develop and implement a Dust Management Plan (DMP), which may include measures to control emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ 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 the Local Authority 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.
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 Local Authority when asked. This should include regular dust soiling check of surfaces such as street furniture, cars, window sills within 100 m 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 the Local Authority 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.
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.
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on 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.
	Avoid site runoff of water or mud.
	Keep site fencing, barriers and scaffolding clean using wet methods.

Issue	Mitigation Measure
	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 cover as described below.
	Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicles/machinery and sustainable travel	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 applicable).
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.
	Minimize drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
	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	Avoid bonfires and burning of waste materials.
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.
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 in continuous use.
	Avoid dry sweeping of large areas.
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
	Record all inspections of haul routes and any subsequent action in a site log book.
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

Potential dust effects during the construction phase are considered to be both temporary and short-term in nature. The impacts are determined to be 'temporary' as they will only potentially occur throughout the construction phase and 'short term' because these will only arise at particular times when certain activities and meteorological conditions combine to create the predicted level. Notwithstanding this, with the application of the above dust control and mitigation measures, it is considered that residual effect at all receptors will be 'not significant' in accordance with the IAQM guidance.

7.1.1 Construction Phase Road Traffic Emissions

The need for further assessment of the potential air quality impacts associated with construction phase road traffic emissions, principally HDV movements, have been screened out as they are considered to have an insignificant effect on air quality and mitigation measures are not required.

7.1.2 Construction Phase NRMM Emissions

In accordance with Part 4 of the IAQM Control of Dust and Emissions guidance, all NRMM would need to adhere to the emissions standards for NO₂ and PM₁₀ set out for NRMM. It is therefore considered the likely effects of construction plant on local air quality would be insignificant.

7.2 Operational Phase.

7.2.1 Road Traffic Emissions

Potential air quality impacts associated with operational phase development trips have been screened out from further assessment as 'the impacts [on air quality from operational phase movements] can be considered to have insignificant effects' in accordance with the Sustainable Travel Plan. Therefore, mitigation measures such as mechanical ventilation are not considered to be required.

7.2.2 Baseline Site Suitability Assessment

A review of RBC monitoring data in consideration of the Application Site, and mapped concentrations by Defra in the locale of the Application Site, indicates no likely exceedance of the 1-hour mean NO₂ AQO.

As no exceedance of the considered AQO is predicted, this follows the 1st hierarchy principle of the IAQM guidance to 'prevent and avoid' exposure²⁴. Therefore, no embedded mitigation into the Proposed Development design (in the form of mechanical ventilation, for example) is required and natural ventilation is possible from an air quality perspective.

8. Summary and Conclusions.

This report details the potential air quality impacts associated with the construction and operation of a proposed commercial/restaurant development at Scours Lane, Reading.

The findings of the assessment are as follows:

- A qualitative assessment of the potential dust impacts during the construction of the Proposed Development has been undertaken. Through good practice and implementation of appropriate mitigation measures, it is expected that the release of dust would be effectively controlled and mitigated, with resulting impacts considered to be 'not significant'. All dust impacts are considered to be temporary and short-term in nature;
- An air quality screening assessment of the air quality impacts of traffic generated by the Proposed Development has been undertaken and the effects are not predicted to be significant where there are relevant receptors, therefore further assessment is not required; and
- A baseline Site Suitability Assessment has been undertaken to assess the suitability of the Application Site for the proposed restaurant use. The results indicate no likely exceedance of the 1-hour mean NO₂ AQO. Therefore, no embedded mitigation into the Proposed Development design is required.

Based on the information above, it is considered that air quality should not be viewed as a constraint to planning and the Proposed Development conforms to the principles of National Planning Policy Framework and the RBC Local Plan.

9. Glossary of Terms.

AADT	Annual Average Daily Traffic
AQAL	Air Quality Assessment Level
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
ASHP	Air Source Heat Pump
AURN	Automatic Urban and Rural Network
Defra	Department for Environment, Food and Rural Affairs
DMP	Dust Management Plan
EHO	Environmental Health Officer
EPUK	Environmental Protection UK
HDV	Heavy Duty Vehicles (> 3.5 tonnes gross vehicle weight)
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LDV	Light Duty Vehicles ($\leq$ 3.5 tonnes gross vehicle weight)
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre
NGR	National Grid Reference
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides (taken to be $\text{NO}_2 + \text{NO}$)
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 micrometres
$\text{PM}_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 micrometres
PPG	Planning Practice Guidance
RBC	Reading Borough Council
SPG	Supplementary Planning Guidance
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal
Trackout	The process involving the transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site

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Appendix 1 - EHO Consultation.

From: Lauren Buchanan
Sent: 09 February 2022 15:27
To: Ross.Jarvis@reading.gov.uk
Cc: Ellie Drage
Subject: RE: Scours Lane - Air Quality

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Ross

Thank you for calling me back this afternoon.

As discussed we will progress with a screening assessment for road traffic impacts within the air quality assessment for Scours Lane given that the EPUK/IAQM screening criteria is only exceeded on a short section of Oxford Road where the sensitive receptors are located approximately 20 – 25 m from the kerb. Also, there are only expected to be an additional 40 LDVs continuing down Oxford Road past the roundabout with Wigmore Lane into the area of the AQMA where there are elevated NO₂ concentrations.

If you have any queries, please feel free to contact me.

Kind Regards,

Lauren

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For people and planet.
Challenge accepted.

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From: Lauren Buchanan
Sent: 31 January 2022 11:31
To: Ross.Jarvis@reading.gov.uk
Subject: Scours Lane - Air Quality

Good Morning Ross

Hoare Lea have recently been appointed to produce an Air Quality Assessment (AQA) for Scours Lane, Reading planning application for a retail drive-through pod (Ref: 211706).

We have been provided with your comments on the requirements for an Air Quality Assessment and Mitigation Strategy (attached) and had a few queries.

I've reviewed policy EN15 and the information supporting it in the Local Plan and it mentioned production of a Supplementary Planning Document – is this document available for review at all please?

Also, we have started to review the available information to produce the AQA and on review of the traffic data the only link that exceeds the EPUK/ IAQM criteria for detailed assessment of >100 AADT is Oxford Road between Scours Lane and the roundabout with Norcot Road/ Wigmore Lane.

If possible, could we arrange a call to discuss the AQA to ensure that we are adequately dealing with your concerns please?

Kind Regards

Lauren

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Appendix 2 - Professional Experience.

Kathryn Woolley (Hoare Lea), BSc (Hons), AMIEnvSc, MIAQM

Kathryn is an Associate of the Air Quality team with Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and a Full Member of the Institute of Air Quality Management.

She has a diverse portfolio of experience and has worked on a range of projects from initial site feasibility, through planning and development to construction and operation. Kathryn's expertise covers planning, and air quality, specifically in relation to residential developments, industrial fixed installations such as district heating networks. Kathryn has completed over 50 EIA in the past 8 years throughout the UK and abroad including; St Johns Masterplan in Manchester (residential led), Leicester City Football club training facility north of Leicester (sports use), 1-5 Grosvenor Place, Westminster (mixed use residential, retail and hotel site), and Chestnut Avenue in Eastleigh (residential and community use).

Lauren Buchanan (Hoare Lea), MSc, BSc (Hons), AMIEnvSc, MIAQM

Lauren is a Senior Air Quality Consultant at Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and a Member of the Institute of Air Quality Management. She has worked on a range of projects gaining experience in many different aspects of air quality assessment, including monitoring and detailed dispersion modelling of dust, odour, roads and industrial emissions for a variety of sectors and to fulfil Local Air Quality Management (LAQM) duties on behalf of Local Authorities. Lauren has undertaken air quality assessments for permit requirements and planning applications, including stand-alone reports, Environmental Impact Assessments, Habitats Regulations Assessments and Development Consent Orders.

Ellie Drage (Hoare Lea), MEarthSci, AMIEnvSc, AMIAQM

Ellie is a Graduate Air Quality Consultant with Hoare Lea. She graduated from the University of Oxford with an Earth Sciences degree focusing on Climate and Ocean Systems. Ellie's MEarthSci project involved reconstructing ocean circulation, climate, and the carbon cycle approximately 100 million years ago, to better understand Earth's past environment.

Ellie has worked on a range of projects across various sectors such as residential, industrial and office. She has undertaken outdoor air quality monitoring, and has experience preparing air quality screening assessments for planning and indoor air quality plans for BREEAM. Ellie's interests lie in the mitigation of pollution and air quality control.



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