



BASELINE AIR QUALITY ASSESSMENT 29 – 35 STATION ROAD READING

REC REFERENCE: AQ105820R1

**REPORT PREPARED FOR: STATION ROAD DEVELOPMENT
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EXECUTIVE SUMMARY

Resource and Environmental Consultants Ltd was commissioned by Station Road Development Company Ltd to undertake a Baseline Air Quality Assessment in support of a planning application for a proposed mixed use development at Station Road.

The proposals comprise the redevelopment of the site to provide a mixed use retail, commercial and hotel, across 22 stories.

The proposed development site is located in close proximity to an area identified by Reading Borough Council as experiencing elevated pollutant concentrations. Subsequently, there is the potential that the development will introduce future site users to poor air quality. Additionally, due to the scale of the proposals, the development has the potential to cause air quality impacts at sensitive locations. These may include fugitive dust emissions from construction works and road vehicle exhaust emissions associated with traffic generated by the site during the operational phase. As such, a Baseline Air Quality Report has been produced to identify any existing air quality issues at the site.

A review of available monitoring data indicated exceedances of the relevant air quality standards at roadside locations in the vicinity of the proposals. This is due to their roadside locations within a town centre. Pollutant background maps showed that the existing levels at the development site are below the relevant air quality standards.

During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. It is considered that the use of good practice control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

Potential impacts during the operational phase of the development may occur due to road traffic exhaust emissions and energy generation. Further detailed assessments would determine the operational impacts of the development and the exposure to pollutants of future site users.





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1. INTRODUCTION

1.1 Background

Resource and Environmental Consultants (REC) Ltd was commissioned by Station Road Development Company Ltd to undertake a Baseline Air Quality Assessment in support of a residential led mixed use development at 29 - 35 Station Road, Reading

1.2 Site Location and Context

The site is located at land at Station Road at approximate National Grid Reference (NGR): 471470, 173700. Reference should be made to Figure 1 for a location plan.

The proposals comprise the redevelopment of the site to provide a mixed use retail, commercial and hotel, across 22 stories.

The proposed development site is located within the Reading Borough Council (RBC) Air Quality Management Area (AQMA). Subsequently, there is the potential that the development will introduce future site users to poor air quality. Additionally, due to the scale of the proposals, the development has the potential to cause air quality impacts at sensitive locations. These may include fugitive dust emissions from construction works and road vehicle exhaust emissions associated with traffic generated by the site during the operational phase. As such, a Baseline Air Quality Assessment has been produced to identify any existing air quality issues at the site. This is detailed in the following report.

1.3 Limitations

This report has been produced in accordance with REC's standard terms of engagement. REC has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from REC; a charge may be levied against such approval.





2. LEGISLATION AND POLICY

2.1 European Legislation

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

- ▶ Directive 99/30/EC - the First Air Quality "Daughter" Directive - sets ambient Air Quality Limit Values (AQLVs) for nitrogen dioxide (NO₂), oxides of nitrogen (NO_x), sulphur dioxide, lead and particulate matter with an aerodynamic diameter of less than 10µm (PM₁₀);
- ▶ Directive 2000/69/EC - the Second Air Quality "Daughter" Directive - sets ambient AQLVs for benzene and carbon monoxide; and
- ▶ Directive 2002/3/EC - the Third Air Quality "Daughter" Directive - seeks to establish long-term objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

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

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

2.2 UK Legislation

The Air Quality Standards Regulations (2010) came into force on 11th June 2010 and transpose the EU Directive 2008/50/EC into UK law. AQLVs were published in these regulations for 7 pollutants, as well as Target Values for an additional 6 pollutants.

Part IV of the Environment Act (1995) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007¹. The AQS sets out AQOs that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for compliance vary slightly.

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

¹ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA, 2007.





Table 1 Air Quality Objectives

Pollutant	Air Quality Objective	
	Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period
NO ₂	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
PM ₁₀	40	Annual mean
	50	24-hour mean; not to be exceeded more than 35 times a year

Table 2 summarises the advice provided in DEFRA guidance LAQM TG (16)² on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

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

² Local Air Quality Management Technical Guidance 2016 LAQM (TG16), DEFRA, 2016.





2.3 Local Air Quality Management

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

2.4 Dust

The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

"Any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."

Enforcement of the Act, in regard to nuisance, is currently under the administration of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). Enforcement can insist that there be no dust beyond the boundary of the works. The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practice measures.

2.5 National Planning Policy

2.5.1 National Planning Policy Framework

The National Planning Policy Framework³ (NPPF) was published on 24th July 2018 and sets out the Government's core policies and principles with respect to land use planning, including air quality. The document includes the following considerations which are relevant to this assessment:

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

[...]

Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit

³ National Planning Policy Framework, Department for Communities and Local Government, 2018.





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."

The implications of the NPPF have been considered throughout this assessment.

2.5.2 National Planning Practice Guidance

The National Planning Practice Guidance⁴ (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 to support the NPPF and make it more accessible. The relevant air quality sections are highlighted below:

Paragraph 001 states that: *"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with EU 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". The role of Local Authorities under LAQM are stated and that Air Quality Action Plans should "identify measures that will be introduced in pursuit of the objectives"*

Paragraph 005 states that *"Whether or not 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 generate air quality impact in an area where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation"*

Paragraph 007 states that *"Assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality". In terms of mitigation, it states that "Mitigation options where necessary will be location specific, will depend on the proposed development and should be proportionate to the likely impact"*

Paragraph 009 shows a flow chart highlighting how the assessment of air quality impacts should fit into the development management process. It makes it clear that air quality impact risks, AQLVs and AQOs should be considered in the decision-making process.

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

2.6 Local Planning Policy

RBC's Local Development Framework (LDF) consists of a portfolio of documents. The Core Strategy, which was adopted with alterations in January 2015, is the principal overarching part. The Core Strategy sets out the strategic policy framework for the city until 2020.

⁴ <http://planningguidance.planningportal.gov.uk/>.





A review of the Core Strategy indicated the following policies in relation to air quality that are relevant to this assessment:

"Policy CS34: Pollution and Water Resources

Development will only be permitted where it would not be damaging to the environment through air, land, noise or light pollution; where it would preserve or ideally enhance ground and surface water quality; and where existing water resources, sewerage and wastewater treatment infrastructure are adequate to support the proposed development.

Proposals for development that are sensitive to the effects of air, noise or light pollution will only be permitted in areas where they will not be subject to high levels of such pollution, unless adequate mitigation measures are provided to minimise the impact of such pollution."

And

"Policy CS11: Employment Land for Alternative Uses

Factors which may be taken into account in assessing these criteria include:

[...]

(iv) effects on neighbouring uses of noise, pollution and air quality, intensity of activity"

Reference has been made to this policy during the undertaking of this Air Quality Assessment by assessing pollutant concentrations across the proposed development.





3. METHODOLOGY

The proposals have the potential to result in air quality impacts during the construction and operational phases. These can be summarised as:

- ▶ Construction - fugitive dust emissions associated with normal construction activities; and
- ▶ Operational - emissions associated with additional traffic generated by the proposals

3.1 Construction Phase Assessment

The undertaking of activities such as demolition, excavation, ground works, cutting, construction, concrete-batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul road and highway surfaces.

Due to the size and nature of the proposals, there is the potential for fugitive dust emissions to occur as a result of construction phase activities. Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

- ▶ Demolition;
- ▶ Earthworks;
- ▶ Construction; and
- ▶ Trackout.

The potential for dust emissions will be assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction'⁵.

The potential for dust emissions for each activity that is likely to take place are considered through three separate dust effects. These are:

- ▶ Annoyance due to dust soiling;
- ▶ Harm to ecological receptors; and
- ▶ The risk of health effects due to a significant increase in exposure to PM₁₀.

The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

3.1.1 Step 1

Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 350m from the site boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment should proceed to Step 2. Additionally, should ecological receptors be identified within 50m of the boundary site or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment should also proceed to Step 2.

⁵ Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, 2014.





Should sensitive receptors not be present within the relevant distances then negligible impacts would be expected and further assessment is not necessary.

3.1.2 Step 2

Step 2 assesses the risk of potential dust impacts. A site is allocated to a risk category based on two factors:

- ▶ The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large (Step 2A); and
- ▶ The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity (Step 2B).

The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied.

Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table 3.

Table 3 Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total building volume greater than 50,000m³ • Potentially dusty construction material (e.g. concrete) • On-site crushing and screening • Demolition activities greater than 20m above ground level
	Earthworks	• Total site area greater than 10,000m² • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time • Formation of bunds greater than 8m in height • More than 100,000 tonnes of material moved
	Construction	• Total building volume greater than 100,000m³ • On site concrete batching • Sandblasting
	Trackout	• More than 50 Heavy Duty Vehicle (HDV) trips per day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length greater than 100m
Medium	Demolition	• Total building volume 20,000m³ to 50,000m³ • Potentially dusty construction material • Demolition activities 10m to 20m above ground level





Magnitude	Activity	Criteria
	Earthworks	- Total site area 2,500m² to 10,000m² - Moderately dusty soil type (e.g. silt) 5 to 10 heavy earth moving vehicles active at any one time - Formation of bunds 4m to 8m in height - Total material moved 20,000 tonnes to 100,000 tonnes
	Construction	- Total building volume 25,000m³ to 100,000m³ - Potentially dusty construction material (e.g. concrete) - On site concrete batching
	Trackout	10 to 50 HDV trips per day - Moderately dusty surface material (e.g. high clay content) - Unpaved road length 50m to 100m
Small	Demolition	- Total building volume under 20,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber) - Demolition activities less than 10m above ground level - Demolition during wetter months
	Earthworks	- Total site area less than 2,500m² - Soil type with large grain size (e.g. sand) - Less than 5 heavy earth moving vehicles active at any one time - Formation of bunds less than 4m in height - Total material moved less than 20,000 tonnes - Earthworks during wetter months
	Construction	- Total building volume less than 25,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	- Less than 10 HDV trips per day - Surface material with low potential for dust release - Unpaved road length less than 50m

Step 2B defines the sensitivity of the area around the development site for demolition, construction, earthworks and trackout. The factors influencing the sensitivity of the area are shown in Table 4.





Table 4 Examples of Factors Defining Sensitivity of an Area

Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	• Users expect of high levels of amenity • High aesthetic or value property • People expected to be present continuously for extended periods of time • Locations where members of the public are exposed over a time period relevant to the AQO for PM₁₀ e.g. residential properties, hospitals, schools and residential care homes	• Internationally or nationally designated site e.g. Special Area of Conservation
Medium	• Users would expect to enjoy a reasonable level of amenity • Aesthetics or value of their property could be diminished by soiling • People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	• Nationally designated site e.g. Sites of Special Scientific Interest
Low	• Enjoyment of amenity would not reasonably be expected • Property would not be expected to be diminished in appearance • Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, playing fields, farmland, footpaths, short term car park and roads	• Locally designated site e.g. Local Nature Reserve

The guidance also provides the following factors to consider when determining the sensitivity of an area to potential dust impacts during the construction phase:

- ▶ Any history of dust generating activities in the area;
- ▶ The likelihood of concurrent dust generating activity on nearby sites;
- ▶ Any pre-existing screening between the source and the receptors;
- ▶ Any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which works will take place;
- ▶ Any conclusions drawn from local topography;
- ▶ Duration of the potential impact, as a receptor may become more sensitive over time; and
- ▶ Any known specific receptor sensitivities which go beyond the classifications given in the document.

These factors were considered in the undertaking of this assessment.





The sensitivity of the area to dust soiling effects on people and property is shown in Table 5.

Table 5 Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 350
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

Table 6 outlines the sensitivity of the area to human health impacts.

Table 6 Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
High	Greater than 32µg/m ³	More than 100	High	High	High	Medium	Low
		10 - 100	High	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	28 - 32µg/m ³	More than 100	High	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	24 - 28µg/m ³	More than 100	High	Medium	Low	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	Less than 24µg/m ³	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Medium	-	More than 10	High	Medium	Low	Low	Low





Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
		1 - 10	Medium	Low	Low	Low	Low
Low	-	1 - 10	Low	Low	Low	Low	Low

Table 7 outlines the sensitivity of the area to ecological impacts.

Table 7 Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	Less than 20	Less than 50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the risk of unmitigated impacts.

Table 8 outlines the risk category from demolition activities.

Table 8 Dust Risk Category from Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Medium
Medium	High	Medium	Low
Low	Medium	Low	Negligible

Table 9 outlines the risk category from earthworks and construction activities.





Table 9 Dust Risk Category from Earthworks and Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Medium	Low
Low	Low	Low	Negligible

Table 10 outlines the risk category from trackout.

Table 10 Dust Risk Category from Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Low	Negligible
Low	Low	Low	Negligible

3.1.3 Step 3

Step 3 requires the identification of site specific mitigation measures within the GLA guidance to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with **negligible** risk, mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

3.1.4 Step 4

Once the risk of dust impacts has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts. For almost all construction activity, the aim should be to control effects through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.

The determination of significance relies on professional judgement and reasoning should be provided as far as practicable. This will be considered throughout the assessment when defining predicted impacts.

3.2 Operational Phase Assessment

The development has the potential to impact on existing air quality as a result of road traffic exhaust emissions, such as NO₂ and PM₁₀, associated vehicles travelling to and from the site. Subject to the availability of relevant traffic data, potential impacts will be defined by predicting pollutant concentrations at sensitive locations using dispersion modelling for the following scenarios:





- ▶ 2017 Base Year Verification;
- ▶ Opening year do-minimum (DM) (predicted traffic flows in 2020 should the proposals not proceed); and
- ▶ Opening year do-something (DS) (predicted traffic flows in 2020 should the proposals be completed).

Receptors potentially sensitive to changes in NO₂ and PM₁₀ concentrations will be identified within 200m of the affected highway network in accordance with the guidance provided within the Design Manual for Roads and Bridges (DMRB)⁶ on the likely limits of pollutant dispersion from road sources. LAQM (TG16)² provides the following examples of where annual mean AQOs should apply:

- ▶ Residential properties;
- ▶ Schools;
- ▶ Hospitals; and
- ▶ Care homes.

The sensitivity impact significance of each receptor will be defined in accordance with the criteria shown in Table 11. These are based upon the guidance provided within the Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) guidance 'Land-Use Planning and Development Control: Planning for Air Quality'⁷

Table 11 Operational Traffic Exhaust Emissions - Significance of Impact

Long Term Average Concentration	% Change in Concentration Relative to AQO			
	1	2-5	6-10	>10
75% or less of AQO	Negligible	Negligible	Slight	Moderate
76 - 94% of AQO	Negligible	Slight	Moderate	Moderate
95 - 102% of AQO	Slight	Moderate	Moderate	Substantial
103 - 109% of AQO	Moderate	Moderate	Substantial	Substantial
110% or more of AQO	Moderate	Substantial	Substantial	Substantial

The criteria shown in Table 11 is adapted from the EPUK and IAQM guidance 'Land-Use Planning and Development Control: Planning for Air Quality' with sensitivity descriptors included to allow comparisons of various air quality impacts. It should be noted that changes of 0%, i.e. less than 0.5%, will be described as negligible in accordance with the EPUK and IAQM guidance.

Following the prediction of impacts at discrete receptor locations utilising the criteria in Table 11, the EPUK and IAQM document states that this framework is to be used as a starting point to make a judgement on significance of effect but other influences might need to be accounted for. Whilst impacts might be determined as 'slight', 'moderate' or 'substantial' at individual receptors, overall

⁶ Design Manual for Roads and Bridges Volume 11, Section 3, Part 1, HA207/07, Highways Agency, 2007.

⁷ Land-Use Planning and Development Control: Planning for Air Quality, Environmental Protection UK and Institute of Air Quality Management, 2015.





effect might not necessarily be deemed as significant in some circumstances. The following factors may provide some assistance in determining the overall significance of a development:

- ▶ Number of properties affected by significant air quality impacts and a judgement on the overall balance;
- ▶ Where new exposure is introduced into an existing area of poor air quality, then the number of people exposed to levels above the objective will be relevant;
- ▶ The percentage change in concentration relative to the objective and the descriptions of the impacts at the receptors;
- ▶ Whether or not an exceedance of an objective is predicted to arise or be removed in the study area due to a substantial increase or decrease; and
- ▶ The extent to which an objective is exceeded e.g. an annual mean NO₂ concentration of 41µg/m³ should attract less significance than an annual mean of 51µg/m³.

These factors will be considered and an overall significance determined for the impact of operational phase road traffic emissions. It should be noted that the determination of significance relies on professional judgement and reasoning should be provided as far as practicable. This will be considered throughout the assessment when defining predicted impacts.

3.3 Future Exposure

The proposed development includes sensitive land use and as such has the potential to introduce new receptors into an area of existing poor air quality. Detailed dispersion modelling will therefore be undertaken to quantify NO₂ and PM₁₀ concentrations across the site and determine suitability for the proposed end-use.





4. BASELINE

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

4.1 Local Air Quality Management

As required by the Environment Act (1995), RBC has undertaken Review and Assessment of air quality within their area of administration. This process has indicated that annual mean concentrations of NO₂ are above the AQO within the city. As such, an AQMA has been declared, described as:

“Reading AQMA - An area encompassing all the main arterial routes in and out of Reading and Central area”

The proposed development site is located within the Reading AQMA. As such, there is potential for the development to cause adverse impacts on air quality within these areas. This has been considered within this report.

4.2 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by RBC using continuous methods throughout the borough. A review of RBC's most recent monitoring data available indicated that there is one automatic analyser in the vicinity of the site, RD1 Caversham Road, approximately 800m north-west of the development. Recent monitoring results are shown in Table 12.

Table 12 NO₂ Monitoring Results

Site Name		Type	NGR (m)		Annual Mean NO ₂ Concentration (µg/m ³)		
			X	Y	2015	2016	2017
RD1	Caversham Road	Roadside	471153	174429	38	39	36

As indicated in **Table 12** the annual mean concentration for NO₂ did not exceed the AQO at the RD1 Caversham Road Analyser within recent years.

RBC also utilise passive diffusion tubes to monitor NO₂ concentrations throughout the area of administration. A review of the most recent monitoring data available indicated seven monitoring locations in close proximity to the site, which were considered to provide the most representative conditions. Recent NO₂ monitoring results from these locations are shown in Table 12. Exceedances of the AQO are shown in **bold**.





Table 13 Diffusion Tube Monitoring Results

Site Name	Type	NGR (m)		Annual Mean NO ₂ Concentration (µg/m ³)		
		X	Y	2015	2016	2017
Picture House	Roadside	471113	173487	30	32	30
Sackville Street	Roadside	471177	173641	40	37	37
Vachel Street	Roadside	471174	173705	33	35	34
Garrad Street	Roadside	471422	173694	42	42	n/a
Friar Street nearr Nandos	Roadside	471437	173589	47	52	50
33 Caverhsam Road	Roadside	471123	173734	48	43	45
59a Caversham Road	Roadside	471169	173869	42	41	43

As indicated in Table 13, the annual mean AQO for NO₂ was exceeded at five diffusion tube locations during recent years. This is due to their roadside locations within an AQMA. Reference should be made to Figure 2 for a graphical representation of the monitoring location.

4.3 Background Pollutant Concentrations

Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in grid square NGR: 471500, 173500. Data for this location was downloaded from the DEFRA website⁸ for the purpose of this assessment and is summarised in Table 14 for 2017 and the development opening year of 2020.

Table 14 Predicted Background Pollutant Concentrations

Pollutant	Predicted Background Concentration (µg/m ³)	
	2017	2020
NO _x	45.32	39.03
NO ₂	28.47	25.32
PM ₁₀	15.63	14.94

As shown in Table 14, background concentrations at the site do not exceed the relevant AQOs.

4.4 Sensitive Receptors

A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. These have been defined for dust and road vehicle exhaust emission impacts

⁸ <http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>.





in the following Sections.

4.4.1 Construction Phase Sensitive Receptors

Receptors sensitive to potential dust impacts during demolition, earthworks and construction were identified from a desk-top study of the area up to 350m from the development boundary. These are summarised in Table 15.

Table 15 Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Less than 20	10 – 100	0
20 - 50	10 – 100	0
50 - 100	More than 100	-
100 - 350	More than 100	-

Reference should be made to Figure 3 within Appendix I for a graphical representation of demolition, earthworks and construction dust buffer zones.

Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 500m of the site access route. These are summarised in Table 16. The exact construction vehicle access routes were not available for the purpose of this assessment as they will depend on sourcing of materials. This is likely to be decided by the contractor. However, it was assumed construction traffic would access the site from Station Road to ensure the maximum potential trackout distance was considered.

Table 16 Trackout Dust Sensitive Receptors

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Less than 20	More than 100	0
20 - 50	More than 100	0

Reference should be made to Figure 4 within Appendix I for a graphical representation of trackout dust buffer zones.

There are no ecological receptors within 50m of the site or trackout boundary. As such, ecological impacts have not been assessed further within this report.

A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 17.





Table 17 Additional Area Sensitivity Factors

Guidance	Comment
Whether there is any history of dust generating activities in the area	The proposal is located in a predominantly commercial area. As such, there is likely to have been a history of dust generating activities due to development in the locality, as well as dust generated from commuting activities.
The likelihood of concurrent dust generating activity on nearby sites	A review of the RBC Planning Portal indicated that the area is currently being regenerated. As such there is the potential for concurrent dust generation.
Pre-existing screening between the source and the receptors	There is currently no vegetation present along any boundary of the site. As such, there is no pre-existing natural protective screening to receptors
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place	The wind direction is predominantly from the south and south-west of the development, as shown in Figure 5 within Appendix I. As such, properties to the north and north-east would be most affected by dust emissions
Conclusions drawn from local topography	The topography of the area appears to be predominantly flat. As such, there are no constraints to dust dispersion
Duration of the potential impact, as a receptor may become more sensitive over time	Currently it is unclear as to the duration of the construction phase. However, it is likely to extend over one year
Any known specific receptor sensitivities which go beyond the classifications given in the document.	No specific receptor sensitivities identified during the baseline

Based on the criteria shown in **Table 17**, the sensitivity of the receiving environment to potential dust impacts was considered to be **high**. This was because users would expect to enjoy a reasonable level of amenity, aesthetics or value of their property could be diminished by soiling and people would be expected to be present for extended periods of time e.g. residential properties.

The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.1, is shown in Table 18.

Table 18 Sensitivity of the Surrounding Area

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Medium





5. ASSESSMENT

There is the potential for air quality impacts as a result of the construction and operation of the proposed development in addition to the exposure of future site users to elevated pollution levels.

The potential construction phase impacts are assessed in the following Section impacts and operational phase impacts would be assessed on the availability of relevant data.

5.1 Construction Phase Assessment

5.1.1 Step 1

The undertaking of activities such as excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul road and highway surfaces.

The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 350m of the site boundary. As such, a detailed assessment of potential dust impacts was required.

5.1.2 Step 2

Demolition

Demolition will involve the removal of existing buildings on the site. It is estimated that the volume of buildings to be demolished is under 20,000m³. As such, the magnitude of potential dust emissions from demolition activities is **small**, in accordance with the criteria outlined in Table 3.

Table 18 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 3, the development is considered to be a **medium** risk site for dust soiling as a result of demolition activities.

Table 18 indicates the sensitivity of the area to human health is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for human health as a result of demolition activities.

Earthworks

Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. Information on soil type was not available for the purpose of this assessment. As such, the soil type was considered to be potentially dusty in order to provide a worst-case scenario.

The proposed development site is estimated to cover a total area of less than 2,500m². In accordance





with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **small**.

Table 18 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 9, the development is considered to be a **low** risk site for dust soiling as a result of earthworks activities.

Table 18 indicates the sensitivity of the area to human health is **low**. In accordance with the criteria outlined in Table 9, the development is considered to be a **negligible** risk site for human health as a result of earthwork activities.

Construction

Due to the size of the development site the total building volume is likely to be between 25,000 m³ to 100,000m³. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **medium**.

Table 18 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 9, the development is considered to be a **medium** risk site for dust soiling as a result of construction activities.

Table 18 indicates the sensitivity of the area to human health is **low**. In accordance with the criteria outlined in Table 9, the development is considered to be a **low** risk site for human health as a result of construction activities.

Trackout

Information on the number of HDV trips to be generated during the construction phase of the development was not available at the time of assessment. Similarly, the surface material and unpaved road length was not known at this stage of the project.

Based on the site area, it is anticipated that the unpaved road length is likely to be less than 50m. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from trackout is therefore **small**.

Table 18 indicates the sensitivity of the area to dust soiling effects to people and property is **high**. In accordance with the criteria outlined in Table 10, the development is considered to be a **low** risk site for dust soiling as a result of trackout activities.

Table 18 indicates the sensitivity of the area to human health is **medium**. In accordance within the criteria outlined in Table 10, the development is considered to be a **negligible** risk site for human health as a result of trackout activities.

Summary of the Risk of Dust Effects

A summary of the risk from each dust generating activity is provided in Table 19.





Table 19 Summary of Potential Unmitigated Dust Risks

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Low	Medium	Low
Human Health	Negligible	Negligible	Low	Negligible

As indicated in **Table 19**, the potential risk of dust soiling is **medium** from demolition and construction activities and **low** from earthwork and trackout activities. The potential risk of human health impacts is **low** from construction activities and **negligible** from demolition, earthworks and trackout activities.

It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase.

5.1.3 Step 3

The IAQM⁵ guidance provides a number of potential mitigation measures to reduce impacts during the construction phase. These measures have been adapted for the development site as summarised in Table 20. The mitigation measures outlined in Table 20 can be reviewed prior to the commencement of construction works incorporated into the existing the strategies as applicable.

Table 20 Fugitive Dust Mitigation Measures

Issue	Control Measure
Communications	• Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary • Develop and implement a stakeholder communications plan that includes community engagement • Display the head or regional office contact information • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the LA
Site Management	• Record all dusty and air quality complaints and make the complaints log available to the LA when asked • Record any exceptional incidents that cause dust/or air emissions, and the action taken to resolve the situation • Make complaints log available to LA when asked • Hold regular liaison meetings with other high risk construction sites that are within 500m of the site boundary. Ensuring plans are co-ordinated and dust and particulate matter emission are minimised





Issue	Control Measure
Monitoring	• Undertake daily on-site and off-site inspection where receptors are nearby to monitor dust • Carry out regular site inspections to monitor compliance with the DMP • Increase frequency of site inspections when activities with a high potential to produce dust are being carried out
Preparing and Maintaining the Site	• Plan site layout so that machinery and dust causing activities are located away from receptors • Fully enclose site or specific operations where there is a high potential for dust production and the site as active for an extensive period • Avoid site runoff of water or mud • Keep site fencing, barriers and scaffolding clean using wet methods • Remove materials that have a potential to produce dust from site as soon as possible • Cover, seed or fence stockpiles to prevent wind whipping Use water as dust suppressant where applicable
Operating Vehicle/ Machinery and Sustainable Travel	• All vehicles to switch off engines - no idling vehicles • Avoid the use of diesel or petrol powered generators where practicable • Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph in unsurfaced haul roads • Produce a Construction Logistics Plan to manage sustainable deliveries Implement a Travel Plan that supports and encourages sustainable travel
Operations	• Cutting equipment to use water as dust suppressant or suitable local extract ventilation • Ensure adequate water supply on the site for effective dust/particulate matter suppression/mitigation • Use enclosed chutes and covered skips • Minimise drop heights • Ensure equipment is readily available on site to clean any spillages
Demolition	• Ensure effective water suppression is used during demolition operations • Avoid explosive blasting • Remove any biological debris before demolitions
Waste Management	• No bonfires





Issue	Control Measure
Earthworks and Construction	• Re-vegetate earthworks and exposed areas • Use Hessian, mulches or trackifiers where it is not possible to re-vegetate • Only remove the cover in small areas during work and not all at once • Avoid scabbling • Ensure sand and other aggregates are stored and not able to dry out, unless it is required for a specific process • Ensure bulk cement and other fine powder materials are delivered and stored to prevent escape
Trackout	• Use water-assisted dust sweeper on the access and local roads • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving sites are covered to prevent escape of materials • Inspect on-site routes for integrity, instigate necessary repairs and record in site log book • Install hard surfaced haul routes which are regularly damped down • Implement a wheel washing system at a suitable location near site exit • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits • Access gates to be located at least 10m from receptors, where possible

5.1.4 Step 4

Assuming the relevant mitigation measures outlined in Table 20 are implemented, the residual effect from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance⁵.





6. CONCLUSION

REC Ltd was commissioned by Station Road Development Company Ltd to undertake a Baseline Air Quality Assessment in support of a planning application for a proposed mixed use development at 29-35 Station Road, Reading.

The proposals comprise the redevelopment of the site to provide a mixed use retail, commercial and hotel, across 22 stories.

The proposed development site is located within the Reading Borough Council (RBC) Air Quality Management Area (AQMA). Subsequently, there is the potential that the development will introduce future site users to poor air quality. Additionally, due to the scale of the proposals, the development has the potential to cause air quality impacts at sensitive locations. These may include fugitive dust emissions from construction works and road vehicle exhaust emissions associated with traffic generated by the site during the operational phase. As such, a Baseline Assessment has been produced to identify any existing air quality issues at the site.

A review of available monitoring data indicated exceedances of the relevant air quality standards at roadside locations in the vicinity of the proposals. This is due to their roadside location within an AQMA. However, pollutant background maps show that the existing levels at the development site are below the relevant AQOs.

During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by earthworks, construction and trackout activities was predicted to be **not significant**.

Potential impacts during the operational phase of the development may occur due to road traffic exhaust emissions and energy generation. Further detailed assessments would determine the operational impacts of the development and the exposure to pollutants of future site users.





7. ABBREVIATIONS

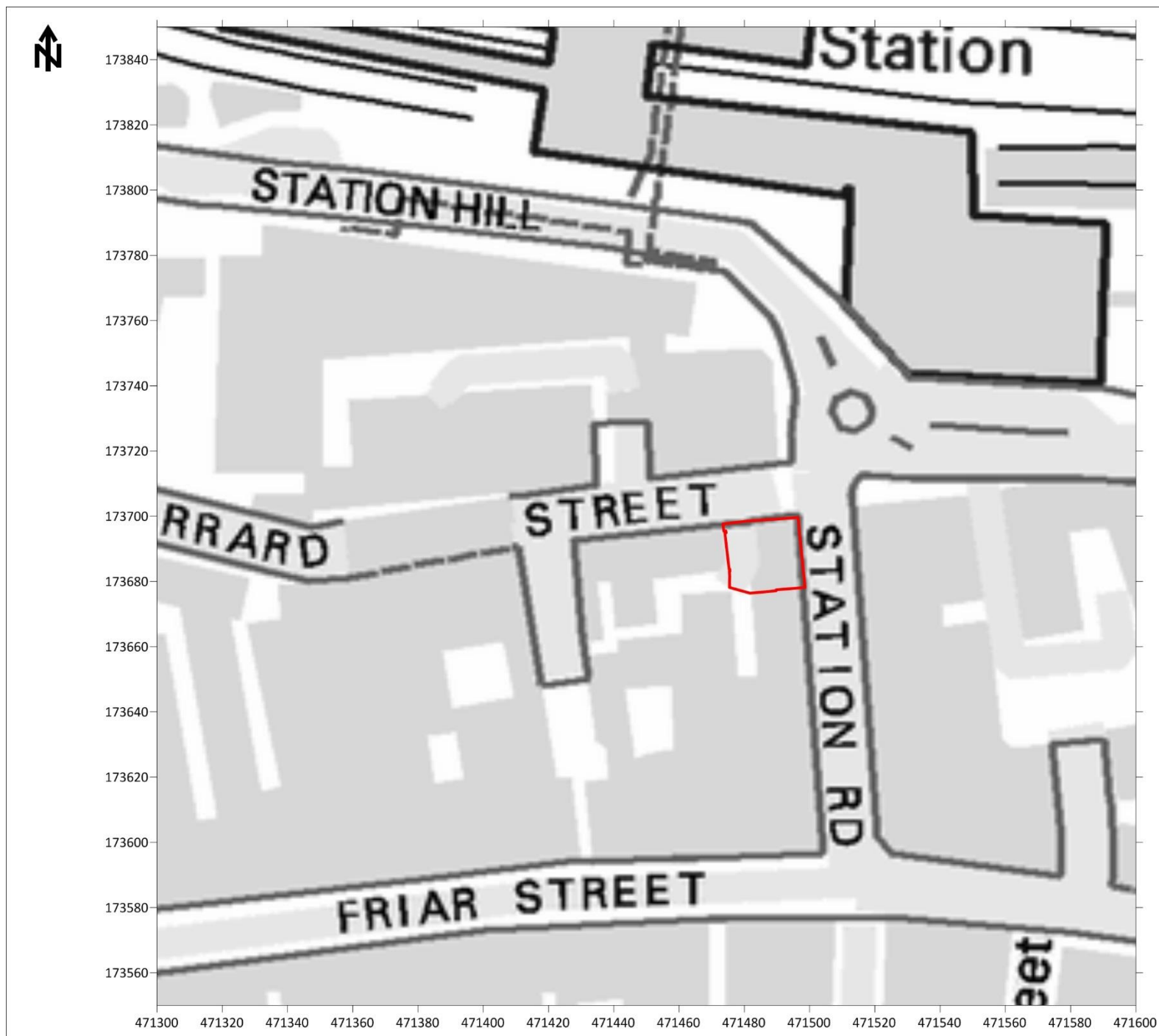
AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objectives
AQS	Air Quality Strategy
DEFRA	Department for Environment, Food and Rural Affairs
DM	Do Minimum
DMRB	Design Manual for Roads and Bridges
DS	Do Something
EPUK	Environmental Protection UK
EU	European Union
HBC	Havant Borough Council
IAQM	Institute of Air Quality Management
LA	Local Authority
LAQM	Local Air Quality Management
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5µm
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10µm
RBC	Reading Borough Council
REC	Resource and Environmental Consultants





APPENDIX I FIGURES





Legend

 Site Boundary

Title

Figure 1
Site Location

Project

Air Quality Assessment
29-35 Station Road, Reading

Project Number

AQ105820

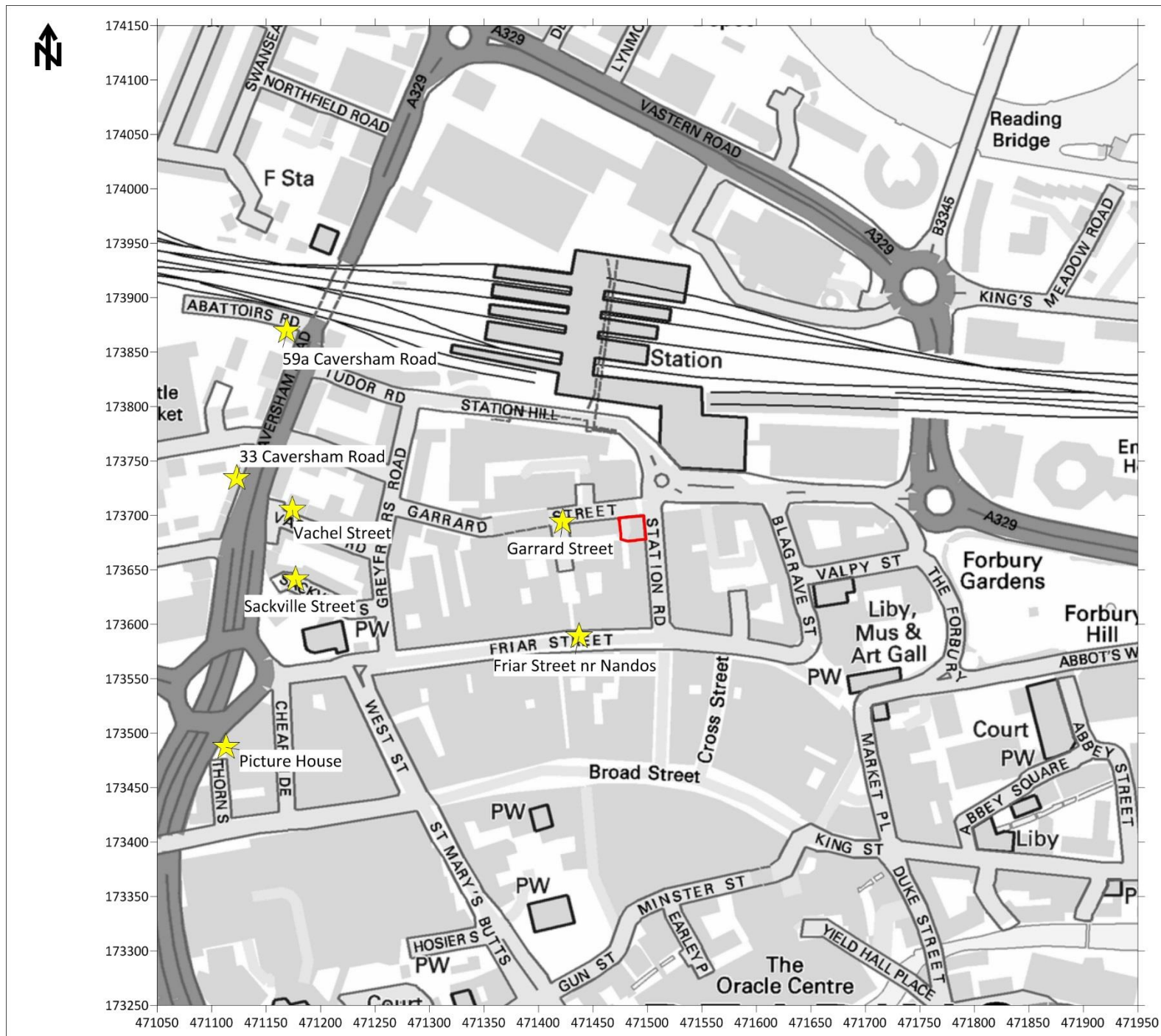
Client

Station Road Development Company Ltd

Contains Ordnance Survey Data
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Resource and Environmental Consultants Ltd
Osprey House, Broadway, Manchester M50 2UE
Tel – 0161 868 1300 Fax – 0161 868 1301
www.rec ltd.co.uk



Legend

-  Site Boundary
-  Diffusion Tube Monitoring Locations

Title

Figure 2
Diffusion Tube Monitoring Locations

Project

Air Quality Assessment
29-35 Station Road, Reading

Project Number

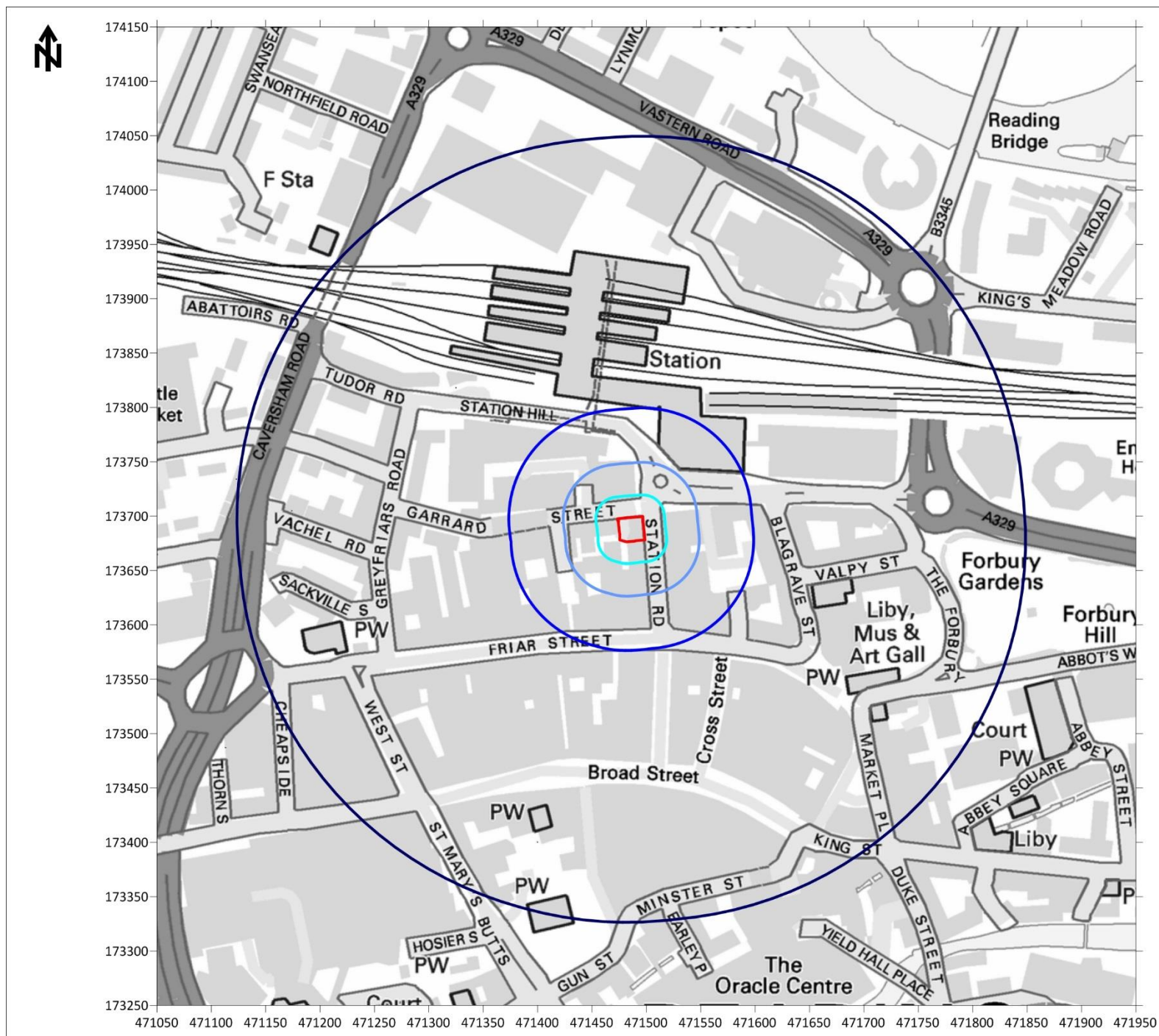
AQ105820

Client

Station Road Development Company Ltd

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Legend

- Site Boundary
- 20m from Site Boundary
- 50m from Site Boundary
- 100m from Site Boundary
- 350m from Site Boundary

Title

Figure 3
Demolition, Earthworks and Construction
Dust Buffer Zones

Project

Air Quality Assessment
29-35 Station Road, Reading

Project Number

AQ105820

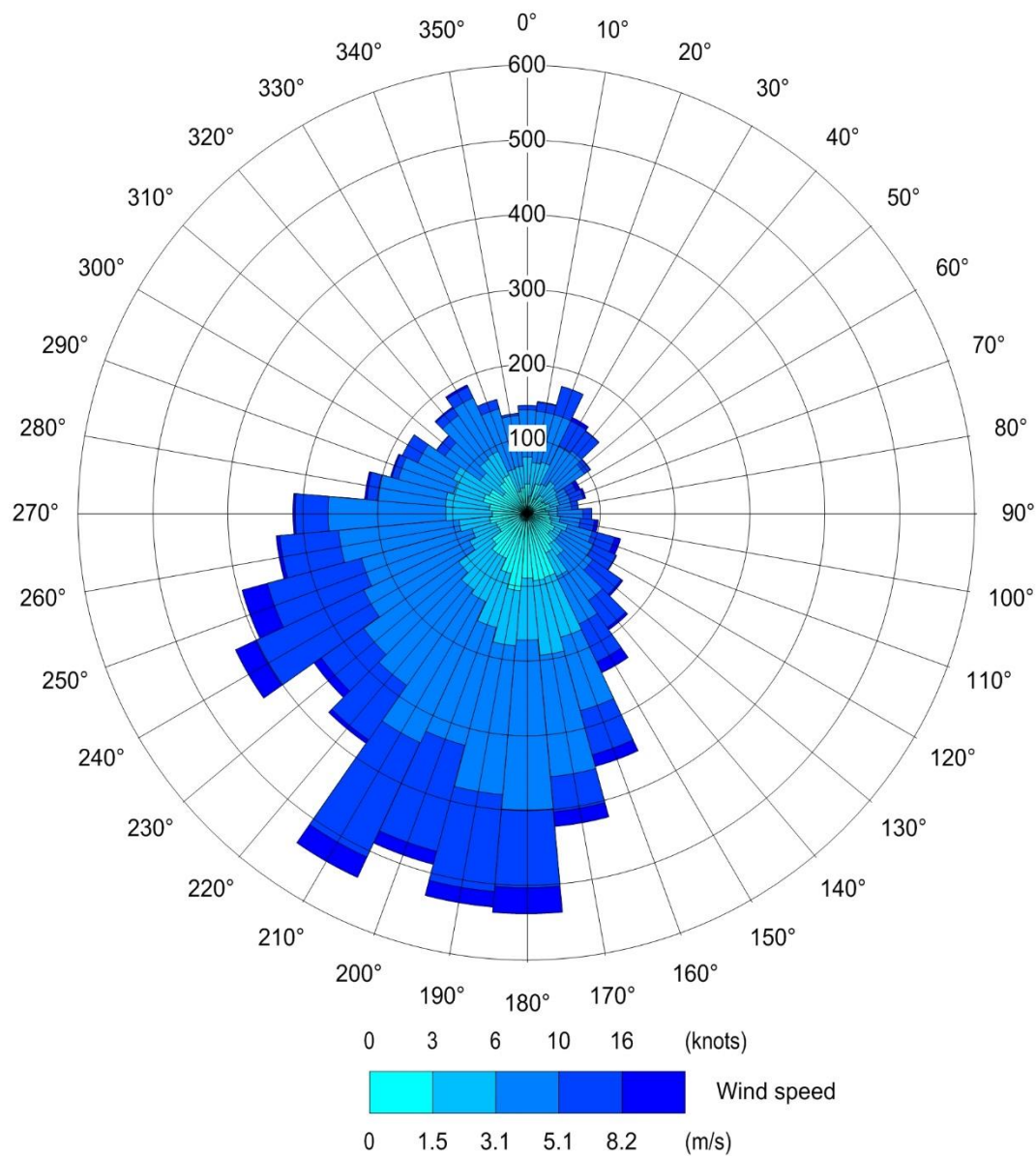
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Legend

Title
Figure 5
Wind Rose
Meteorological Station

Project
Air Quality Assessment
29-35 Station Road, Reading

Project Number
AQ105820

Client
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Baseline Air Quality Assessment
29-35 Station Road
October 2018
AQ105820r1

APPENDIX II ASSESSOR'S CURRICULUM VITAE





CONAL KEARNEY

Principal Air Quality Consultant

BEng(Hons), MSc, MIAQM, MIEEnvSc

KEY EXPERIENCE:

Conal is a Principal Consultant with specialist experience in the air quality and odour sector. His key capabilities include:

- ▶ Advanced atmospheric air dispersion modelling of road vehicle and industrial emissions using ADMS-ROADS and AIRVIRO.
- ▶ Preparation of factual and interpretative Air Quality Assessment reports and Air Quality Environmental Statement chapters in the vicinity of proposed schemes and developments in accordance with DEFRA, Environment Agency and Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) methodologies.
- ▶ Management and delivery of project work on key, land development and urban regeneration projects.
- ▶ Assessment of road vehicle exhaust emissions using the Design Manual for Roads and Bridges (DMRB) calculation spreadsheet.
- ▶ Assessment of dust impacts from construction sites to the Institute of Air Quality Management (IAQM) methodology.
- ▶ Dust and Odour impact assessments from minerals and waste sites
- ▶ Representing clients at public enquiries and planning hearings.

QUALIFICATIONS:

- ▶ Bachelor of Engineering
- ▶ Master of Science
- ▶ Member of Institute of Air Quality Management
- ▶ Member of the Institute of Environmental Science (IES)

SELECT PROJECTS SUMMARY:

Industrial Developments

Buck Park, Denholme - AQA and dust assessment for proposed mineral extraction and site restoration project.

Messingham Quarry, North Lincolnshire - AQA and dust impacts for proposed new sand extraction site.

Arden Quarry, Derbyshire - AQA for proposed mineral extraction and site restoration

Calder Brick Works, Yorkshire - AQA for proposed site restoration plan

Coopers Moss, St Helens AQA and dust assessment for materials import and site restoration.

Clayton Hall Landfill, Chorley - AQA and odour assessment for proposed landfill extension and mineral extraction.

Highways Developments

Alderley Edge Bypass, Cheshire - AQA for major new road scheme.

South Heywood – EIA for new link road and mixed use joint development

Residential Developments

Beck's Mill, Silsden – AQA and emissions calculation for proposed residential development

Bredbury Curve, Stockport - AQA assessment for proposed residential development in AQMA.

Hollin Lane, Middlewich – AQA for large scale residential development.

Friars School, Southwark, London. School development for mixed use education and residential building in AQMA.

Abbotsford House, Bearsden, Scotland – AQA and dust assessment for residential development

Kelvedon Street, Newport, South Wales – AQA for new housing development

Westcraig, Edinburgh - EIA for residential development

Public Sector

Technical advisor on Manchester Airport Consultative Committee - advise members on environmental technical matters in relation to the airport's operations.

Cheshire County Council - compile AQ chapters for Local Transport Plan

Cheshire East Council - specialist AQ advice on highways, minerals and waste projects

Local Air Quality Management

Broughton Gyratory, Chester - dispersion model for City Centre detailed assessment report

Congleton town centre - dispersion modelling assessment for detailed and further assessment reports.

Disley - dispersion modelling assessment for detailed and further assessments

Holmes Chapel - dispersion modelling assessment for detailed and further assessment reports for road and rail sources.

Crewe - town centre dispersion modelling for detailed and further assessment reports.

Commercial Developments

Granta Park Daycare Centre, Oxfordshire. AQA for new build daycare centre adjacent to major road.

Curzon Cinema, Colchester. Air quality assessment for town centre new build cinema.

Newfoundland Circus, Bristol - AQA for hotel development in city centre

Salesians School, Chertsey - AQA for school extension near M25





MARYAM MAKANVAND

Graduate Air Quality Consultant

BA, M.Sc.

KEY EXPERIENCE:

Maryam is a Graduate Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- ▶ Production of Air Quality Assessments to the Department for Environment, Food and Rural Affairs (DEFRA), Environment Agency and Environmental Protection UK (EPUK) methodologies for clients from the residential, retail and commercial sectors.
- ▶ Detailed dispersion modelling of road vehicle emissions using ADMS-Roads. Studies have included impact assessment of pollutant concentrations at various floor levels and assessment of suitability of development sites for proposed end-use.
- ▶ Assessment of road vehicle exhaust emissions using the Design Manual for Roads and Bridges (DMRB) calculation spreadsheet.
- ▶ Assessment of dust impacts from construction sites to the Institute of Air Quality Management (IAQM) methodology.
- ▶ Production of air quality mitigation strategies for developments throughout the UK.
- ▶ Defining baseline air quality conditions and identification of sensitive areas.

QUALIFICATIONS:

- ▶ Master of Science
- ▶ Bachelor of Arts

SELECT PROJECTS SUMMARY:

Mixed Use Development: Rutland Mills, Wakefield Waterfront

Air Quality Assessment in support of a proposed mixed use scheme comprising of a range of uses including commercial, hotel, training and education. Concerns were raised as the site was located within the City of Wakefield AQMA. Subsequently, there were concerns the proposals would introduce future users to poor air quality. Dispersion modelling of road vehicle exhaust emissions was completed using ADMS-Roads to consider site suitability for the proposed end-use. Pollutant concentrations were predicted to be below the relevant AQO across the site and as such, air quality was not considered to be a planning constraint.

Residential Development: The Acres, Formby

Air Quality Assessment in support of a proposed development consisting of up to 286 residential units. Concerns were raised as the site was located adjacent to the A565 Formby Bypass which was considered to be significant sources of road vehicle exhaust emissions. Subsequently, there were concerns the proposals would introduce future users to poor air quality. Dispersion modelling of road vehicle exhaust emissions was completed using ADMS-Roads to consider site suitability for the proposed end-use. Pollutant concentrations were predicted to be below the relevant AQO across the site and as such, air quality was not considered to be a planning constraint.

Mixed Use Development: Cornbrook, Manchester

Air Quality Assessment in support of a PRS scheme for circa 280 residential units and a hotel. Concerns were raised as the site was located adjacent to the Manchester/Liverpool Diesel railway line. Additionally the site was partially located within the Manchester AQMA. Subsequently, there were concerns the proposals would introduce future users to poor air quality. Dispersion modelling of road vehicle exhaust emissions and train emissions was completed using ADMS-Roads to consider site suitability for the proposed end-use. Pollutant concentrations were predicted to be below the relevant AQO across the site and as such, air quality was not considered to be a planning constraint.

Residential Development: 120 Chigwell Road, South Woodford, London

Air Quality Assessment in support of a proposed development comprising of a 3 storey temporary modular accommodation for homeless households. Concerns were raised as the site was located within the Redbridge AQMA. Subsequently, there were concerns the proposals would introduce future users to poor air quality. Dispersion modelling of road vehicle exhaust emissions was completed using ADMS-Roads to consider site suitability for the proposed end-use. Pollutant concentrations were predicted to be above the air quality standards at sensitive locations across the site and as such mitigation measures were required and referenced. Subject to the inclusion of the relevant mitigation measures, air quality issues were not considered a constraint to planning consent.

