



Air Quality Statement

Greggs Pod, Reading

October 2022

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JLL

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1. Introduction

Background

- 1.1 Phlorum Limited was commissioned by JLL to produce an Air Quality Statement for the proposed development of a commercial unit located at Hyperion Trade Park, Rose Kiln Lane, Reading, RG2 0HG. The National Grid Reference for the centre of the site is 471747, 171278. A site location plan has been included in Figure 1.
- 1.2 The proposal is for the erection of a standalone pod unit at Hyperion Trade Park, which falls under Class E of the amended Use Classes Order. The pod unit will be occupied by a Greggs. The development also proposes the provision of an outdoor seating area, car parking spaces and additional landscaping.
- 1.3 Land use in the vicinity of the site consists primarily of residential uses to the east and commercial uses to the west.
- 1.4 The main sources of air pollution in the vicinity of the site are from vehicles travelling on the B3031 Basingstoke Road to the east, A33 to the west and nearby Rose Kiln Lane to the south.
- 1.5 Reading Borough Council (RBC), the local planning authority, have declared one Air Quality Management Area (AQMA) within the district. The Reading AQMA was declared in 2009 due to exceedances of the annual mean Air Quality Standard (AQS) for Nitrogen Dioxide (NO₂). This AQMA comprises an area encompassing all the main arterial routes in and out of Reading. The application site is situated within the section of the Reading AQMA overlying the B3031 Basingstoke Road.

Scope of Assessment

- 1.6 The focus of this report will be to qualitatively assess the impacts of the proposed development's traffic generation on local air quality, and in particular, the Reading AQMA.
- 1.7 This report also assesses the potential for dust nuisance and soiling impacts to occur due to the construction of the proposed development and offers recommendations for suitable mitigation to reduce the possibility of such impacts occurring.

2. Policy Context

The UK Air Quality Strategy

- 2.1 The UK Air Quality Strategy (UKAQS)¹ sets out Air Quality Standard (AQS) concentrations for a number of key pollutants that are to be achieved at sensitive receptor locations across the UK by corresponding air quality objective (AQO) dates. The sensitive locations at which the standards and objectives apply are those where the population are reasonably expected to be exposed to said pollutants over the particular averaging period.
- 2.2 For those objectives to which an annual mean standard applies, the most common sensitive receptor locations used to compare concentrations against the standards are areas of residential housing. It is reasonable to expect that people living in their homes could be exposed to pollutants over such a period of time.
- 2.3 Schools and children's playgrounds are also often used as sensitive locations for comparison with annual mean objectives due to the increased sensitivity of young people to the effects of pollution (regardless of whether or not their exposure to the pollution could be over an annual period). For shorter averaging periods of between 15 minutes, 1 hour or 1 day, the sensitive receptor location can be anywhere where the public could be exposed to the pollutant over these shorter periods of time. A summary of the AQS relevant to this assessment are included in Table 2.1, below.

Table 2.1: UK Air Quality Standards and Objectives

Pollutant	Averaging Period	Air quality standard ($\mu\text{g.m}^{-3}$)	Air quality objective
Nitrogen dioxide (NO_2)	1 hour	200	$200 \mu\text{g.m}^{-3}$ not to be exceeded more than 18 times a year
	Annual	40	$40 \mu\text{g.m}^{-3}$
Particulate Matter (PM_{10})	24-hour	50	$50 \mu\text{g.m}^{-3}$ not to be exceeded more than 35 times a year
	Annual	40	$40 \mu\text{g.m}^{-3}$
Particulate Matter ($\text{PM}_{2.5}$)	Annual	20	$20 \mu\text{g.m}^{-3}$

¹ Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2) July 2007.

- 2.4 The objectives adopted in the UK are based on the Air Quality (England) Regulations 2002², as amended, for the purpose of Local Air Quality Management. These Air Quality Regulations have been adopted into UK law from the limit values required by European Union Daughter Directives on air quality.
- 2.5 The UKAQS for PM_{2.5} was recently amended as part of The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020³.
- 2.6 Obligations under the Environment Act 1995 require local authorities to declare an AQMA at sensitive receptor locations where an objective concentration has been predicted to be exceeded. In setting an AQMA, the local authority must then formulate an Air Quality Action Plan (AQAP) to seek to reduce pollution concentrations to values below the objective levels.
- 2.7 Air quality is managed locally by RBC, who have declared one AQMA within the borough. The Reading AQMA was declared in 2009 due to exceedances of the annual mean AQS for NO₂. The AQMA covers an area of Reading Town Centre, areas along the major radial road routes into Reading (including J11 of the M4) and along the railway lines where they pass through built-up areas. RBC set out its initial AQAP⁴ in January 2009, following the declaration of the Reading AQMA. An updated AQAP was issued by RBC in 2016⁵, outlining progress made since 2009 along with future actions and strategies to reduce pollution levels within the AQMA, and across Reading.

National Planning Policy Framework

- 2.8 The National Planning Policy Framework (NPPF)⁶, which was updated in July 2021, sets out the Government's planning policy for England. At its heart is an intention to promote more sustainable development. A core principle in the NPPF that relates to air quality effects from development is that planning should "contribute to conserve and enhance the natural and local environment" as demonstrated at paragraph 174:

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

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic*

2 The Air Quality (England) (Amendment) Regulations 2002 - Statutory Instrument 2002 No.3043.

3 The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020.

4 Reading Borough Council. (2009). *Air Quality Action Plan*.

5 Reading Borough Council. (2016). *Air Quality Action Plan Update*.

6 Ministry of Housing, Communities & Local Government. (2021). *National Planning Policy Framework*.

and other benefits of the best and most versatile agricultural land, and of trees and woodland;

- c) maintaining the character of the undeveloped costs, while improving public access to it where appropriate;*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*

2.9 The NPPF goes on to state the following at 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 wider area to impacts that could arise from the development."

2.10 With regard to a compliance with relevant limit values and national objectives for air pollutants, along with assessing cumulative effects the NPPF states the following at 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 to 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."

- 2.11 Regarding potential adverse impacts generated by development, the NPPF states the following:

"[...] Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

- 2.12 The NPPF offers a broad framework but does not afford a detailed methodology for assessments. Specific guidance for air quality continues to be provided by organisations such as the Department for Environment, Food and Rural Affairs (Defra), Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM).

National Planning Practice Guidance

- 2.13 Reference ID 32 (Air Quality) of the National Planning Practice Guidance (PPG)⁷, which was updated in November 2019, provides guiding principles on how planning can take account of the impact of new development on air quality. The PPG summarises the importance of air quality in planning and the key legislation relating to it.
- 2.14 As well as describing the importance of International, National and Local Policies (detailed elsewhere in this report), it summarises the key sources of air quality information. It also explains when air quality is likely to be relevant to a planning decision, stating:

"Considerations that may be relevant to determining a planning application include whether the development would:

 *Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*

 *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-*

⁷ Planning Practice Guidance (PPG) 32. (Updated November 2019). Air Quality.
<http://planningguidance.planningportal.gov.uk/blog/guidance/air-quality/>.

fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;

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

2.15 Details are also provided of what should be included within an air quality assessment. Key considerations include:

-  Baseline local air quality;
-  Whether the proposed development could significantly affect local air quality during construction/operation; and
-  Whether the development is likely to expose more people to poor air quality.

2.16 Examples of potential air quality mitigation measures are also provided in the PPG.

Local Planning Policy

2.17 The *Reading Borough Local Plan*⁸ is RBC's key planning document. It was adopted in November 2019 with the intention of guiding development within the borough up to 2036, to improve both the quality of people's lives and the environment in which they live. The plan provides a basis for achieving a sustainable and prosperous future for Reading.

2.18 RBC's Local Plan stipulates the need to abide by NPPF regulations and encourage sustainable transport amongst other actions. Policies of either direct, or indirect relevance to air quality are outlined below:

2.19 Policy CC6: *Accessibility and the Intensity of Development* highlights the need for developments to be accessible by a range of transport modes, including sustainable choices:

⁸ Reading Borough Council. (2019). *Reading Borough Local Plan* – Adopted November 2019.

“The scale and density of development will be related to its level of accessibility by walking, cycling and public transport to a range of services and facilities, with the densest and largest scale development taking place in the most accessible locations. Unless it can be demonstrated that the accessibility of a site is to be significantly upgraded, for example, by providing high quality pedestrian routes or providing access to good public transport services, any new development must be at a scale, density and intensity appropriate to that level of accessibility.”

“It is important that development is accessible by a choice of modes of transport. This means that the primary locations for new development will be those accessible by walking and cycling to a wide range of employment, services and facilities, leisure, education and health facilities, or which are accessible by walking to routes/stops of frequent public transport services that provide easy access to the aforementioned uses.”

2.20 Policy CC9: *Securing Infrastructure* states that, where identified and justified, measures should be taken to tackle poor air quality or for on-going air quality monitoring to be implemented.

2.21 Policy EN15: *Air Quality* states the following:

“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."*

- 2.22 Policy TR5: *Car and Cycle Parking and Electric Vehicle Charging* outlines the parking standards for new development, as follows:

"Development should provide car parking and cycle parking that is appropriate to the accessibility of locations within the Borough to sustainable transport facilities, particularly public transport.

Development should make the following provision for electric vehicle charging points:

-  *All new houses with dedicated off-street parking should provide charging points;*
-  *Within communal car parks for residential or non-residential developments of at least 10 spaces, 10% of spaces should provide an active charging point."*

- 2.23 Sustainability policies CC2, CC3, and CC5 relating to *Sustainable Design and Construction, Adaptation to Climate Change* and *Waste Minimisation and Storage*, respectively outline features that proposed developments can implement to help achieve sustainable development.
- 2.24 Reading Borough Council's Local Plan is supported by the *Sustainable Design and Construction Supplementary Planning Document (SPD)*⁹, adopted in December 2019. This SPD explains planning requirements regarding energy, climate change, water management and waste reduction. The purpose of this document is to guide developers and decision-makers on the implementation of key sustainability policies set out in the Reading Local Plan, it is a material consideration in the determination of planning applications.
- 2.25 The Sustainable Design and Construction SPD highlights some sustainable design features that may help to alleviate air quality including the installation of green walls or living walls and protecting existing woodlands in conjunction with additional tree planting.

9 Reading Borough Council. (2019). *Sustainable Design and Construction Supplementary Planning Document*.

3. Assessment Methodology

Guidance

- 3.1 Defra's *Local Air Quality Management Technical Guidance* (LAQM.TG(22))¹⁰ was followed in carrying out the assessment. The latest EPUK & IAQM guidance on *Planning for Air Quality*¹¹ was also referred to throughout the assessment.
- 3.2 Guidance published by the IAQM on the *Assessment of Dust from Demolition and Construction*¹² was also used to assess the risk of dust emissions during the construction phase of the proposed development.
- 3.3 The Greater London Authority (GLA) *Supplementary Planning Guidance*¹³ on the control of dust from construction has also been referred to, which is considered best practice guidance for the UK. It details a number of mitigation measures that should be adopted to minimise adverse impacts from dusts and fine particles.

Baseline Conditions

- 3.4 The baseline air quality conditions in the vicinity of the site are established through the compilation and review of appropriately sourced background concentration estimates and local monitoring data.
- 3.5 Defra provides estimated background concentrations of the UKAQS pollutants at the *UK Air Information Resource* (UK-AIR) website¹⁴. These estimates are produced using detailed modelling tools and are presented as concentrations at central 1km² National Grid square locations across the UK. At the time of writing, the most recent background maps were from August 2020 and based on monitoring data from 2018.
- 3.6 Being background concentrations, the UK-AIR data are intended to represent a homogenous mixture of all emissions sources within the general area of a particular grid square location. Concentrations of pollutants at various sensitive receptor locations can, therefore, be calculated by modelling the emissions from a nearby pollution source, such as a busy road, and then adding this to the appropriate UK-AIR background datum.

10 Defra. 2022. Part IV of the Environment Act 1995, Environment (Northern Ireland) Order 2002 Part III, Local Air Quality Management, Technical Guidance LAQM. TG (22). London: Defra.

11 EPUK & IAQM. (2017). *Land-Use Planning & Development Control: Planning for Air Quality*.

12 IAQM. (2014). *Guidance on the assessment of dust from demolition and construction*.

13 Greater London Authority. (2014). *The Control of Dust and Emissions During Construction and Demolition*.

14 Defra: UK-AIR. www.uk-air.defra.gov.uk

- 3.7 Reading Borough Council's (RBC) automatic and non-automatic local pollutant monitoring data are also considered an appropriate source for establishing baseline air quality at the application site. The most recent available data from RBC's *2020 Air Quality Annual Status Report*¹⁵ (ASR) has been included and referenced.

Construction Phase

- 3.8 The construction phase of the proposed development will involve a number of activities that could potentially produce polluting emissions to air. Predominantly, these will be emissions of dust. However, they could also include releases of odours and/or more harmful gases and particles.
- 3.9 The IAQM's guidance to assess the impacts of construction on human and ecological receptors has been followed in carrying out this air quality assessment. The guidance suggests that where a receptor is located within 350m (50m for statutory ecological receptors) of a site boundary and/or 50m of a route used by construction vehicles, up to 500m from the site entrance, a dust assessment should be undertaken. High sensitivity receptors are considered particularly sensitive when located within 20m of a works area. Figure 2 shows receptors that could be sensitive to dust that are located within 350m of the boundaries of the site.
- 3.10 The Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁶, which incorporates Natural England's interactive maps, has been reviewed to identify whether any statutory ecological sensitive receptors are situated within 50m of the site boundary or within 50m of any routes used by construction vehicles on the public highway, up to 500m from the site entrance.

Construction Significance

- 3.11 The IAQM guidance suggests that Demolition, Earthworks, Construction and Trackout should all be assessed individually to determine the overall significance of the construction phase.
- 3.12 In the IAQM dust guidance, the first step in assessing the risk of impacts is to define the potential dust emission magnitude. This can be considered '*Negligible*', '*Small*', '*Medium*' or '*Large*' for each of the construction stages. Whilst the IAQM provides examples of criteria that may be used to assess these magnitudes, the vast number of potential variables mean that every site is different and therefore professional judgement must be applied by what the IAQM refer to as a "technically competent assessor". The construction phase assessment therefore relies on the experience of the appraiser.

15 Reading Borough Council. (2021). *2020 Air Quality Annual Status Report (ASR)*.

16 Natural England and MAGIC partnership organisations. Multi Agency Geographic Information for the Countryside. <http://www.magic.gov.uk/> (Accessed September 2022).

- 3.13 As such, attempts to define precisely what constitutes a *Negligible, Small, Medium* or *Large* dust emission magnitude should be treated with caution. Factors such as the scale of the work, both in terms of size and time, the construction materials and the plant to be used must be considered.
- 3.14 The second step is to define the sensitivity of the area around the construction site. As stated in the IAQM guidance:

“the sensitivity of the area takes into account a number of factors:

-  *the specific sensitivities of receptors in the area;*
-  *the proximity and number of those receptors;*
-  *in the case of PM₁₀, the local background concentrations; and*
-  *site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.”*

- 3.15 Based on these factors, the area is categorised as being of ‘Low’, ‘Medium’ or ‘High’ sensitivity.
- 3.16 When dust emission magnitudes for each stage and the sensitivity of the area have been defined, the risk of dust impacts can be determined. The IAQM provides a risk of impacts matrix for each construction stage. The overall significance for the construction phase can then be judged from the stages assessed. Again, this is subject to professional judgement.
- 3.17 Combustion exhaust gases from diesel-powered plant and construction vehicles accessing the site will also be released. However, the volumes and periods over which these releases will occur are unlikely to result in any significant peaks in local air pollution concentrations and therefore this has been scoped out of the assessment.

Operational Phase

Road Transport Sources

- 3.18 Vehicle emissions will arise from the combustion of fossil fuels in vehicle engines and their subsequent release to atmosphere via tailpipe exhausts. The most significant pollutants released by cars and other vehicles are oxides of nitrogen (NO₂/NO_x) and particulate matter (PM₁₀ and PM_{2.5}). Releases of carbon monoxide (CO) and some volatile hydrocarbons (e.g. benzene and 1,3-butadiene) are of less significance and are not assessed further in this report.

- 3.19 As it is elevated annual mean concentrations of NO₂ and PM₁₀ that have resulted in the declaration of most AQMAs across the UK, these are the pollutants of most concern and they have therefore been the focus of this air quality assessment. PM_{2.5}, which is another fraction of particulate matter, has also been considered.
- 3.20 The latest EPUK & IAQM planning guidance¹¹ provides indicative thresholds for changes in traffic flows which would require a detailed air quality assessment. These are a change in 24-hour annual average daily traffic (AADT) flows exceeding 100 light-duty vehicles (LDVs) and/or 25 heavy-duty vehicles (HDVs) within or adjacent to an AQMA, or a change of AADT flows exceeding 500 LDVs and/or 100 HDVs elsewhere.
- 3.21 In addition, it is necessary to determine whether the proposed development could introduce new receptors into an area of existing poor air quality. Further analysis of the site's suitability, in air quality terms, for the introduction of new commercial receptors has been undertaken in Section 5 of this report.

Consultation

- 3.22 RBC's environmental protection department were contacted on 17th August 2022 to discuss and agree the proposed scope of this air quality assessment. A response was received on 7th September 2022 agreeing to the proposed scope.

4. Baseline Assessment

- 4.1 This chapter is intended to establish prevailing air quality conditions in the vicinity of the development site.

UK-AIR Background Pollution

- 4.2 The UK-AIR¹⁴ predicted background concentrations for NO₂, PM₁₀ and PM_{2.5} for 2019 to 2024 are presented in Table 4.1. These data were taken from the central grid square location closest to the application site National Grid Reference: 471500, 171500.

Table 4.1: 2019 to 2024 Background Concentrations of Pollutants at the site.

Pollutant	Predicted background concentration (µg.m ⁻³)						Averaging Period	Air quality standard concentration (µg.m ⁻³)
	2019	2020	2021	2022	2023	2024		
NO ₂	17.4	16.7	16.1	15.6	15.2	14.7	annual mean	40
PM ₁₀	15.9	15.6	15.4	15.3	15.1	14.9	annual mean	40
PM _{2.5}	11.0	10.7	10.6	10.5	10.3	10.2	annual mean	20

- 4.3 The data in Table 4.1 show that annual mean background concentrations of NO₂, PM₁₀ and PM_{2.5}, in the vicinity of the application site between 2019 and 2024, were predicted to be well below their respective AQs.
- 4.4 The data show that in 2022, NO₂, PM₁₀ and PM_{2.5} concentrations are predicted to be below their respective AQs by 61%, 61.8% and 47.5% respectively. As such, annual mean background pollutant concentrations are likely to be below their respective AQs at, and in the vicinity of, the site.
- 4.5 Concentrations of all pollutants were predicted to decline each year. These reductions are principally due to the forecast effect of the roll out of cleaner vehicles, but also due to UK national and international plans to reduce emissions across all sectors.

Local Sources of Monitoring Data

- 4.6 Local air quality monitoring is considered an appropriate source of data for the purposes of describing baseline air quality. At the time of writing, the most recent ASR¹⁵ released by RBC included local monitoring data from 2019.

Automatic Monitoring

- 4.7 RBC currently undertakes automatic (continuous) monitoring of NO₂ at three locations on: Caversham Road, Oxford Road and London Road. Additionally, Defra's Automatic Urban and Rural Network (AURN) operates at one location in Reading. Data from Defra's AURN automatic monitoring station situated in the Reading Old Cemetery has also been included. The most recent available data from these monitors are included in Table 4.2 below.

Table 4.2: NO₂ Monitoring Data from RBC Automatic Monitors.

Monitor	Type	Distance from the application site (km)	Annual mean NO ₂ concentration (µg.m ⁻³)			
			2016	2017	2018	2019
Reading AURN	UB	2.6	34.0	29.0	26.0	22.0
RD4 (London Rd)	R	2.9	32.0	28.0	30.0	27.0
RD1 (Caversham Rd)	R	3.2	39.0	37.0	40.0	35.0
RD3 (Oxford Rd)	R	4.2	30.0	28.0	28.0	26.0

Note: "R" = Roadside; "UB" = Urban Background. "**Bold**" denotes exceedance of the AQS.

- 4.8 The data in Table 4.2 show that annual mean NO₂ concentrations at automatic monitoring stations RD4, RD1, and RD3 were below the 40 µg.m⁻³ AQS by 32.5%, 12.5% and 35.0%, in 2019, respectively.
- 4.9 The Reading AURN monitoring station recorded an annual mean NO₂ concentration 45.0% below the 40 µg.m⁻³ AQS in 2019.
- 4.10 Recorded NO₂ concentrations at all automatic monitoring stations were generally below the 40 µg.m⁻³ AQS between 2016 and 2019, with the exception of monitor RD1, which recorded an annual mean NO₂ concentration of 40 µg.m⁻³ in 2018.
- 4.11 The Reading AURN monitoring station is situated in an urban background location at the Old Cemetery, distanced from any local sources of pollution. This monitor recorded an annual mean NO₂ concentration of 22.0 µg.m⁻³ in 2019, which is 45% below the 40 µg.m⁻³ AQS. Due to this monitor's urban background location, measurements at this site are most likely to be representative of background pollutant conditions across the application site, although the Reading AURN is positioned 2.6km north-east of the site.
- 4.12 Automatic monitoring of PM₁₀ was also undertaken at the four previously mentioned automatic monitoring stations. The most recent available PM₁₀ monitoring data from these monitoring stations are included in Table 4.3 below.

Table 4.3: PM₁₀ Monitoring Data from RBC Automatic Monitors.

Monitor	Type	Distance from the application site (km)	Annual mean PM ₁₀ concentration (µg.m ⁻³)			
			2016	2017	2018	2019
Reading AURN	UB	2.6	13.0	12.0	13.0	13.0
RD4 (London Rd)	R	2.9	19.0	18.0	17.0	17.0
RD1 (Caversham Rd)	R	3.2	20.0	23.0	24.0	24.0
RD3 (Oxford Rd)	R	4.2	22.0	21.0	23.0	21.0

Note: "R" = Roadside; "UB" = Urban Background.

- 4.13 The data in Table 4.3 show that annual mean PM₁₀ concentrations remained well below the 40 µg.m⁻³ annual mean AQS at all automatic monitoring stations between 2016 and 2019.
- 4.14 Roadside automatic monitoring stations RD4, RD1, and RD3 recorded annual mean PM₁₀ concentrations in 2019 below the 40 µg.m⁻³ AQS by 57.5%, 40.0%, and 47.5%, respectively.
- 4.15 The Reading AURN monitoring station also recorded an annual mean PM₁₀ concentration 67.5% below the 40 µg.m⁻³ AQS in 2019. As mentioned above, concentrations at this monitoring location are most likely to be representative of background pollutant conditions across the application site, although the Reading AURN monitor is positioned 2.6km north-east of the site.
- 4.16 RBC does not currently undertake any monitoring of PM_{2.5} within the borough, however, Defra's AURN monitoring station undertakes monitoring of PM_{2.5}. The latest available PM_{2.5} monitoring data from the Reading AURN monitor are shown in Table 4.4 below.

Table 4.4: PM_{2.5} Monitoring Data from the Defra's Reading AURN Monitor.

Monitor	Type	Distance from the application site (km)	Annual mean PM _{2.5} concentration (µg.m ⁻³)			
			2016	2017	2018	2019
Reading AURN	UB	2.6	9.0	10.0	7.0	8.0

Note: "UB" = Urban Background.

- 4.17 The data in Table 4.4 show that annual mean PM_{2.5} concentrations at the Reading AURN monitoring station remained well below the 20 µg.m⁻³ AQS throughout the 2016 to 2019 monitoring period. This urban background monitoring station recorded an annual mean PM_{2.5} concentration of 8.0 µg.m⁻³ in 2019; 60.0% below the annual mean AQS in 2019.

Non-Automatic Monitoring

- 4.18 RBC also operates an extensive non-automatic, NO₂ diffusion tube monitoring network across the borough. The most recent available monitoring data for diffusion tubes located within 2.0km of the application site are included in Table 4.5 below.

Table 4.5: Monitoring data from RBC's NO₂ diffusion tubes.

Monitor	Type	Distance from the application site (km)	Annual mean NO ₂ concentration (µg.m ⁻³)			
			2016	2017	2018	2019
Red Cow	R	1.57	38.0	35.0	38.0	31.0
44 Crown Street	R	1.57	37.0	35.0	34.0	29.0
Exbourne Road	R	1.63	-	-	-	15.0
Shinfield Rd/Cedar Rd	K	1.77	42.0	38.0	34.0	34.0
Shinfield Rd/Whitley Wood Rd	R	1.86	34.0	31.0	31.0	26.0
Blenheim Terrace, Castle Hill	R	1.86	39.0	39.0	33.0	34.0
128 Castle Hill	R	1.89	45.0	46.0	42.0	39.0
Sidmouth Street-Trinity Hall	R	1.89	-	-	37.0	34.0
Wycliffe Baptist Church	R	1.89	49.0	40.0	37.0	39.0

Note: "R" = Roadside; "K" = Kerbside. **Bold** denotes exceedance of the AQS.

- 4.19 The data in Table 4.5 show that annual mean NO₂ concentrations at those diffusion tubes located within 2.0km of the development site occasionally exceeded the 40 µg.m⁻³ AQS between 2016 and 2018. During 2019 the annual mean AQS for NO₂ was not exceeded at any monitoring location within 2.0km of the application site.
- 4.20 The Red Cow monitor, located 1.57km to the north of the application site, is the closest diffusion tube to the site and recorded an annual mean NO₂ concentration of 31.0 µg.m⁻³ in 2019, which is 22.5% below the 40 µg.m⁻³ AQS. However, given the location of this monitor at a junction on the corner of Southampton Street and Crown Street, less than 5m from the kerb, it is likely that NO₂ concentrations recorded at this monitor will be elevated above those at the site, which is distanced approximately 12m from the kerb of Rose Kiln Lane and approximately 54m from B3031 Basingstoke Road.

- 4.21 It is important to note that all RBC non-automatic monitors displayed in Table 4.5 are situated in either roadside or kerbside settings, adjacent to busy roads within the Reading AQMA, with many of these set adjacent to the A329 Oxford Road. Given the proximity of these diffusion tubes to major roads within the Reading AQMA, measured pollutant concentrations at these sites are unlikely to be representative of likely conditions across the development site, which is set back further from the B3031 Basingstoke Road.

5. Construction Phase Impacts

- 5.1 The construction phase of the proposed development will involve a number of activities that could produce polluting emissions to air. Predominantly, these will be emissions of dust.
- 5.2 The estimates for the dust emission magnitude for demolition, earthworks, construction and trackout below are based on the professional experience of Phlorum's consultants, information provided by the client and Google Earth imagery.

Dust Emission Magnitude

Demolition

- 5.3 There are no existing structures at the site to be demolished, and as such, there will be no requirement for demolition ahead of the construction of the proposed development. Therefore, the demolition phase will not be considered further within this report.

Earthworks

- 5.4 The total area of the site within the red line boundary is 0.106 acres, which equates to 430sqm, which falls into the IAQM¹² *Small* dust emission category.
- 5.5 Overgrown shrubbery is expected to be removed from site although it is not known exactly what amount of earth would need to be moved during earthworks, nor how many heavy-earth moving vehicles would be active at any one time.
- 5.6 The overall dust emission magnitude for the earthworks stage has been based on the total area of the site and is considered to be *Small* with reference to IAQM guidance¹².

Construction

- 5.7 During construction, activities that have the potential to cause emissions of dust may include concrete batching, sandblasting, and piling. Localised use of cement powder and general handling of construction materials also have the potential to generate dust emissions, as does the effect of wind-blow from stockpiles of friable materials.
- 5.8 The total building volume of the proposed development is anticipated to be below 25,000m³, falling into the IAQM's *Small* dust emission magnitude category.
- 5.9 The construction phase of the proposed development will involve the erection of a standalone pod unit. The primary construction materials are expected to include cladding and galvanised steel roof sheeting with low potential for dust release.

- 5.10 Based on the total building volume and the use of construction materials with low potential for dust release, the dust emission magnitude for the construction phase is expected to be *Small* with reference to the IAQM guidance.

Trackout

- 5.11 Construction traffic, when travelling over soiled road surfaces, has the potential to generate dust emissions and to also add soil to the local road network. During dry weather, soiled roads can lead to dust being emitted due to physical and turbulent effects of vehicles.
- 5.12 The proposed development will utilise Rose Kiln Lane for access to the application site. Therefore, no unpaved road surfaces will be utilised by construction vehicles accessing the site.
- 5.13 Due to the size of the site, it is expected that fewer than 10 heavy-duty vehicles will access the site per day, falling into the IAQM's *Small* dust emission magnitude category.
- 5.14 As no unpaved road surfaces are expected to be utilised during the construction phase, the overall dust emission magnitude for the trackout phase is considered to be *Small* with reference to the IAQM guidance.

Emission Magnitude Summary

- 5.15 A summary of the dust emission magnitude as a result of the activities of Earthworks, Construction and Trackout as specified in the IAQM guidance, and discussed above, are listed in Table 5.1 below. Overall, the dust emission magnitude is considered to be *Small*.

Table 5.1: Dust Emission Magnitude for the construction activities, based on the IAQM's guidance.

Activity	Dust Emission Magnitude
Earthworks	Small
Construction	Small
Trackout	Small

Sensitivity of the Area

- 5.16 Having established the emission magnitudes for each phase above, the sensitivity of the area must be considered to establish the significance of effects. The effect of dust emissions depends on the sensitivity of each receptor.
- 5.17 High sensitivity human receptors include residential dwellings, schools, and hospitals, but can include locations such as car showrooms when considering the impacts of dust soiling.

- 5.18 The impacts of dust emissions from the sources discussed above have the potential to cause an annoyance to human receptors living in the local area. Within distances of 20m of the site boundary there is a high risk of dust impacts, regardless of the prevailing wind direction. Up to 100m from the construction site, there may still be a high risk, particularly if the receptor is downwind of the dust source.
- 5.19 With the exponential decline in dust with distance from dust generating activities, it is considered that for receptors more than 350m from the site boundary, the risk is negligible. Furthermore, the risks at over 100m only have the potential to be significant in certain weather conditions, e.g. downwind of the source during dry periods.
- 5.20 The approximate number of high sensitivity human receptors in the vicinity of the site is detailed in Table 5.2 below and shown in Figure 2.

Table 5.2: Approximate number of High Sensitivity Receptors within 350m of the development site.

Distance to site (m)	Approximate number of receptors	Receptor Details
<20	0	Residential Dwellings
<50	10-100	Residential Dwellings
<100	10-100	Residential Dwellings
<350	>400*	One School Global Reading Senior Campus, Residential Dwellings

Note: * Includes the number of pupils at local educational institutions.

- 5.21 Figure 3 shows that the predominant wind direction at the closest relevant meteorological station at Farnborough Airport (2019), is from the south-west, with frequent but lesser winds from the north-east. As shown in Figure 2, there are few residential receptors in close proximity to the application site. However, as there are between 10-100 high sensitivity receptors within 50m of the site, the sensitivity of the area to dust soiling impacts is defined as *Medium*.
- 5.22 UK-AIR predicted annual mean concentrations of PM₁₀ are below 24µg.m⁻³ at the site. This provides a good indication that PM₁₀ concentrations for both annual mean and daily mean concentrations are likely to be well below the respective AQs at the site and adjacent uses. Therefore, the sensitivity of the area to human health impacts is defined as *Low*.

- 5.23 Review of the Multi Agency Geographic Information for the Countryside (MAGIC)¹⁶ website, which incorporates Natural England's interactive maps, has identified no statutory ecological receptors within 50m of the site, or within 50m of the roads expected to be used, up to 500m from the site. The closest statutory ecological receptor to the development site is the Pearman's Copse Local Nature Reserve (LNR) situated approximately 2.5km south-east of the site. Therefore, the construction phase of the proposed development is expected to have a *Negligible* impact on local ecological sites.

Risk of Impacts

- 5.24 Having established the potential dust emission magnitudes and sensitivity of the area, the risk of impacts can be determined in accordance with the IAQM guidance. These are summarised in Table 5.3.

Table 5.3: Summary of Impact Risk by Construction Stage based on the IAQM's dust guidance.

Stage	Impact Risk		
	Nuisance Dust	Ecology	PM ₁₀
Earthworks	Low	Negligible	Negligible
Construction	Low	Negligible	Negligible
Trackout	Negligible	Negligible	Negligible

- 5.25 Overall, the proposed development is considered to be *Low Risk* for nuisance dust soiling effects, *Negligible Risk* for Ecology and *Negligible Risk* for PM₁₀ health effects, in the absence of mitigation.

Site Specific Mitigation

- 5.26 The GLA guidance¹³ suggests a number of mitigation measures that should be adopted in order to minimise impacts from dusts and fine particles. Appropriate measures that could be included during construction of the proposed development include:
- 🌱 ideally cutting, grinding and sawing should not be conducted on-site and pre-fabricated material and modules should be brought in where possible;
 - 🌱 where such work must take place, water suppression should be used to reduce the amount of dust generated;
 - 🌱 skips, chutes and conveyors should be completely covered and, if necessary, enclosed to ensure that dust does not escape;
 - 🌱 no burning of any materials should be permitted on site;
 - 🌱 any excess material should be reused or recycled on-site in accordance with appropriate legislation;

- 🌱 developers should produce a waste or recycling plan;
 - 🌱 following earthworks, exposed areas and soil stockpiles should be re-vegetated to stabilise surfaces, or otherwise covered with hessian or mulches;
 - 🌱 stockpiles should be stored in enclosed or bunded containers or silos and kept damp where necessary;
 - 🌱 hard surfaces should be used for haul routes where possible;
 - 🌱 haul routes should be swept/washed regularly;
 - 🌱 vehicle wheels should be washed on leaving the site;
 - 🌱 all vehicles carrying dusty materials should be securely covered; and
 - 🌱 delivery areas, stockpiles and particularly dusty items of construction plant should be kept as far away from neighbouring properties as possible.
- 5.27 In addition, the IAQM lists recommended mitigation measures for *Low*, *Medium* and *High* Dust Impact Risk sites. The highly recommended mitigation measures for *Low Risk* sites are included in Appendix A of this report.
- 5.28 Where dust generation cannot be avoided in areas close to neighbouring properties, additional mitigation measures should be put in place, such as: windbreaks, sprinklers, and/or time/weather condition limits on the operation of some items of plant or the carrying out of activities that are likely to generate a particularly significant amount of dust.

Residual Effects

- 5.29 After the implementation of the mitigation measures listed above and in Appendix A, the significance of each phase of the construction programme will be reduced and the residual significance of impact for the construction phase is expected to be *Negligible*.

6. Operational Phase

Impacts on Local Air Quality

- 6.1 The latest EPUK & IAQM planning guidance¹¹ provides indicative thresholds for changes in traffic flows which would require a detailed air quality assessment when located within an AQMA. These are a change in 24-hour AADT flows of more than 100 LDVs and/or 25 HDVs. Changes below these thresholds can be reasonably considered to have an insignificant impact on local air quality. The development site is located within the Reading AQMA.
- 6.2 Connect Consultants Ltd, the transport consultants for the project, have provided traffic data for this development.
- 6.3 The transport consultant utilised the TRICS database to provide estimates of expected trip generation for the new development. As specific trip generation projections are unavailable for a Greggs pod unit, data for a drive thru coffee shop have been used as the closest comparison. However, these estimates are considered to be an overestimation of trip generation at the development and therefore should be considered overly robust estimates.
- 6.4 Based on TRICS data for a drive thru coffee shop, estimates of expected additional AADT flows generated by the new development on local roads are as follows:
-  Rose Kiln Lane West- 110 LDVs, 2HDVs
 -  Rose Kiln Lane East – 112 LDVs
 -  A33 North – 55 LDVs, 1HDV
 -  A33 South – 55 LDVs, 1 HDV
 -  B3031 North – 56 LDVs
 -  B3031 South – 56 LDVs
- 6.5 The proposed development is not expected to generate AADT flows in exceedance of the EPUK & IAQM thresholds on the majority of the roads in close proximity to the site within the Reading AQMA.
- 6.6 Slight exceedances of the EPUK & IAQM threshold have been predicted on Rose Kiln Lane East and a short section of Rose Kiln Lane West. However, the estimated maximum exceedance of the threshold is 12 LDV's on Rose Kiln Lane East, which is expected to be an overestimate of trips rates generated by the new development.
- 6.7 Furthermore, there are no sensitive receptors adjacent to Rose Kiln Lane West and few adjacent to Rose Kiln Lane East, with the façade of the nearest sensitive receptor being distanced approximately 13m from Rose Kiln Lane East.
- 6.8 Therefore, overall, it can reasonably be assumed that the proposed development would not significantly impact air quality. The rationale behind this screening process was agreed with RBC's EHO.

Site Suitability

- 6.9 The LAQM.TG(22)¹⁰ guidance (Tables 7.7 and 7.8) sets out the classification of monitoring locations and where these are in relation to sources of pollution. The guidance states that an *Urban background* location is, as follows:

"An urban location distanced from sources and therefore broadly representative of city-wide background conditions, e.g. urban residential areas."

- 6.10 The AEA *Diffusion Tube for Ambient NO₂ Monitoring: Practical Guide*¹⁷ (AEA guidance) provides further detailed definitions which help to classify urban background sites. Specifically, Section 3.2.2 states that, where a site meets the following criteria, it can be reasonably defined as being set in an urban background location, away from adverse impacts associated with emissions from road sources:

-  >50m from any major source of NO₂ (e.g., multi-storey car parks);
-  >30m from any *very busy* road (>30,000 vehicles per day);
-  >20m from any *busy* road (10,000 – 30,000 vehicles per day);
-  >10m from any *main* road; and
-  >5m from locations where vehicles may stop with their engines idling.

- 6.11 The primary sources of air pollution within the vicinity of the development site are vehicles travelling on the B3031 Basingstoke Road to the east of the site and Rose Kiln Lane to the south.
- 6.12 The Department for Transport (DfT) undertook manual traffic counts on the B3031 and Rose Kiln Lane. In 2019^{18,19}, AADT flows along these road were between 10,000 and 20,000 vehicles. Therefore, these can be classed as busy roads with reference to the AEA guidance.
- 6.13 The closest receptor at the proposed application site is situated approximately 22m from the kerb of Rose Kiln Lane to the south and 54m from the kerb of the B3031 Basingstoke Road to the east. Therefore, using the above criteria, the proposed development site can be classified as an urban background site. Following the AEA and LAQM.TG(22) guidance, it is expected that pollutant concentrations at the site are likely to be similar to those identified at urban background sites within the area.

17 AEA Energy and Environment (2008). *Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance for Laboratories and Users*.

18 Department for Transport. (2019). *Manual Count Points*. Site Number: 946001
<https://roadtraffic.dft.gov.uk/manualcountpoints/946001> [Accessed September 2022]

19 Department for Transport. (2020). *Manual Count Points*. Site Number: 801050
<https://roadtraffic.dft.gov.uk/manualcountpoints/801050> [Accessed September 2022]

- 6.14 UK-AIR estimates and monitoring data from the Reading AURN automatic monitor, indicate that NO₂, PM₁₀, and PM_{2.5} concentrations across the development site are likely to be below their relevant AQs and are expected to decrease further in future years.
- 6.15 Therefore, considering the above, the development site is anticipated to be suitable, in air quality terms, for the introduction of new commercial receptors, and no further assessment of site suitability is considered necessary.

7. Discussion

Construction Phase Impacts

- 7.1 The construction phase of the development could give rise to emissions which could cause dust soiling effects on adjacent uses. Following the IAQM guidance, the construction phase of the development can be considered to be *Low Risk* for nuisance dust impacts, *Negligible Risk* for PM₁₀ health effects, and to be *Negligible* for ecology, in the absence of mitigation.
- 7.2 Following the implementation of the mitigation measures provided in Appendix A and listed in Section 5.26, emissions from the construction programme will be reduced and the residual significance of impact for the construction phase is expected to be reduced to *Negligible*, thus complying with the requirements of the NPPF.

Operational Phase Impacts

- 7.3 The need for a detailed pollutant dispersion modelling assessment of the proposed development's sensitivity to local air quality has been screened out using Defra and AEA guidance, along with review of local pollutant monitoring data. This was primarily due to the site being well distanced from local pollutant sources and background concentrations being anticipated to be well below the AQSSs. Therefore, the site is considered to be suitable, in air quality terms, for the introduction of new, sensitive receptors, and no further assessment of site suitability is considered necessary.
- 7.4 The proposed development is not expected to generate volumes of traffic in exceedance of the indicative thresholds prescribed by the EPUK & IAQM planning guidance. Therefore, the need to undertake a detailed dispersion modelling assessment of the proposed development's impact on local air quality has been screened out with reference to the EPUK & IAQM guidance. Therefore, it can be reasonably assumed that the operation of the proposed development would have an insignificant impact on local air quality.

8. Conclusions

- 8.1 Phlorum Limited was commissioned by JLL to produce an Air Quality Statement for the proposed development of a commercial unit located at Hyperion Trade Park, Rose Kiln Lane, Reading, RG2 0HG.
- 8.2 The proposal is for the erection of a standalone pod unit at Hyperion Trade Park, which falls under Class E of the amended Use Classes Order. The pod unit will be occupied by a Greggs. The development also proposes the provision of an outdoor seating area, car parking spaces and additional landscaping.
- 8.3 UK-AIR background concentrations and selected local air quality monitoring from the wider area suggest that pollution concentrations within the vicinity of the application site are likely to be below the relevant UK Air Quality Strategy standard concentrations. As such, the site is considered acceptable for the proposed introduction of new receptors.
- 8.4 The need for detailed pollutant dispersion modelling has been screened out using Defra, Environmental Protection UK and Institute of Air Quality Management guidance. The increases in pollution concentrations, as a result of scheme generated traffic, are therefore not expected to have a significant impact on local air quality.
- 8.5 During construction, adopting appropriate mitigation measures should prevent any significant air quality effects on the surrounding area.
- 8.6 The proposed development is expected to comply with all relevant air quality policy. Air quality should not, therefore, pose any significant obstacles to the planning process.

Figures and Appendices

Figure 1: Site Location Plan

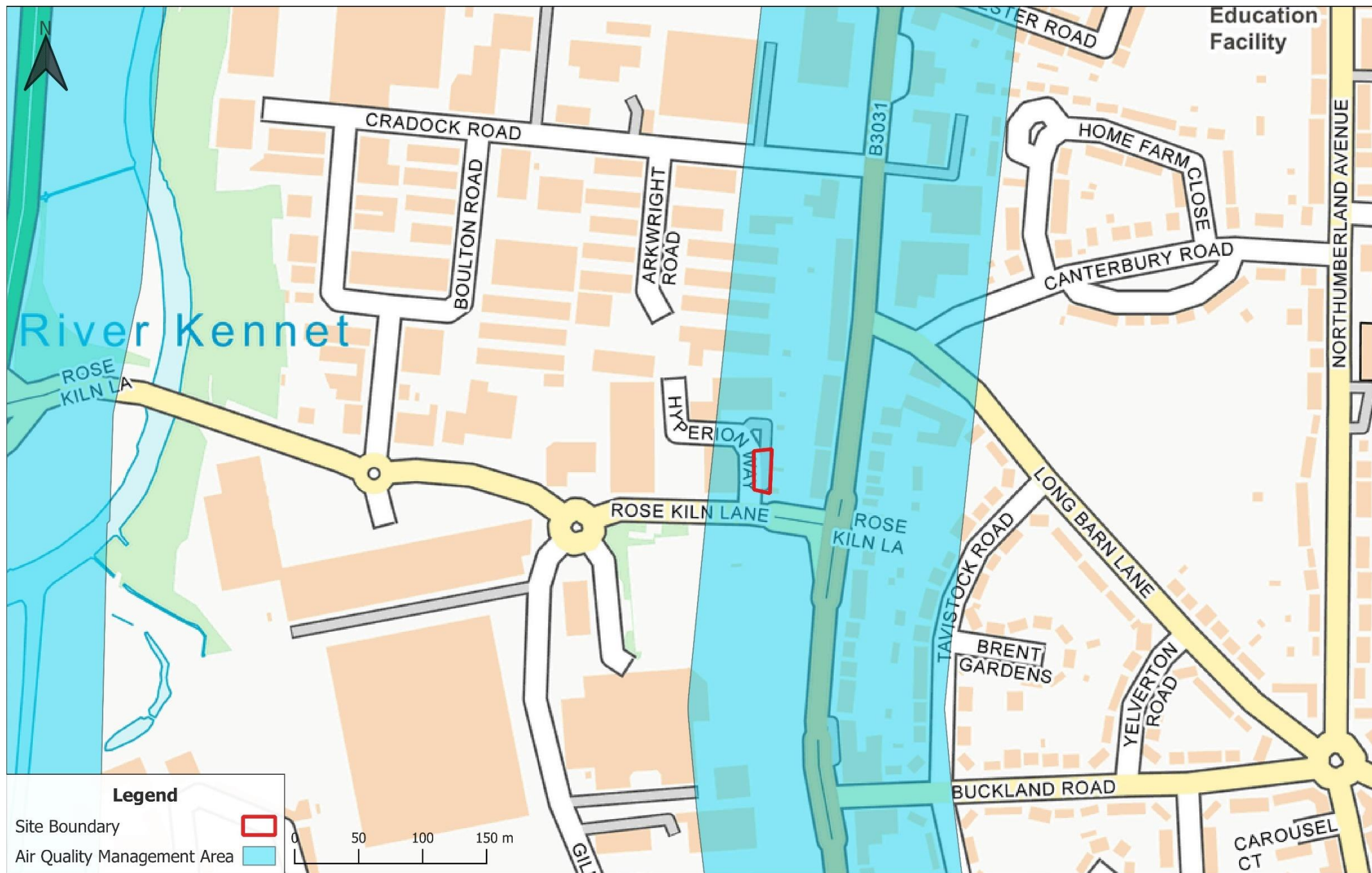


Figure 1: Site Location Plan

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Figure 2: Construction Phase Receptors

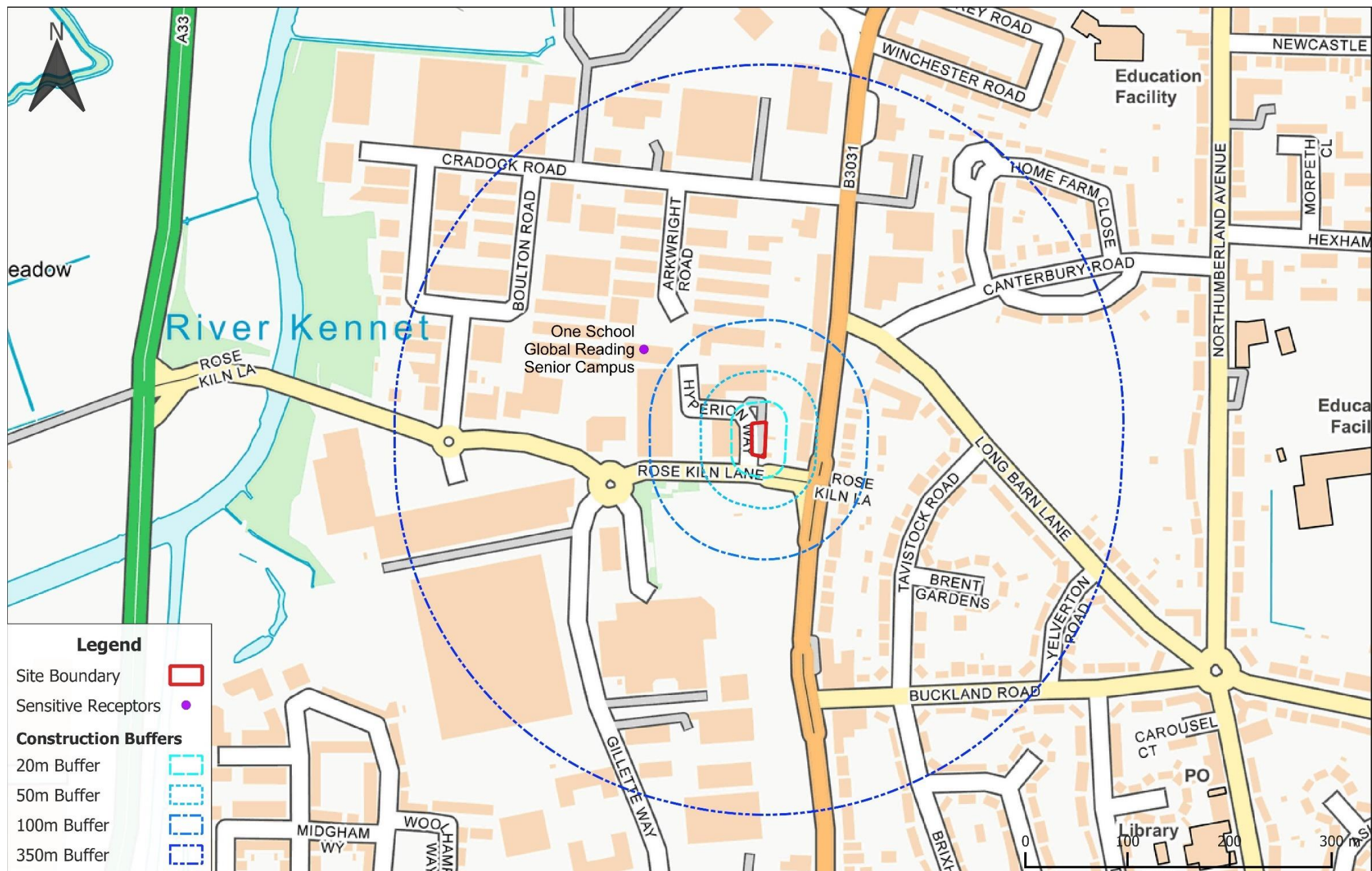


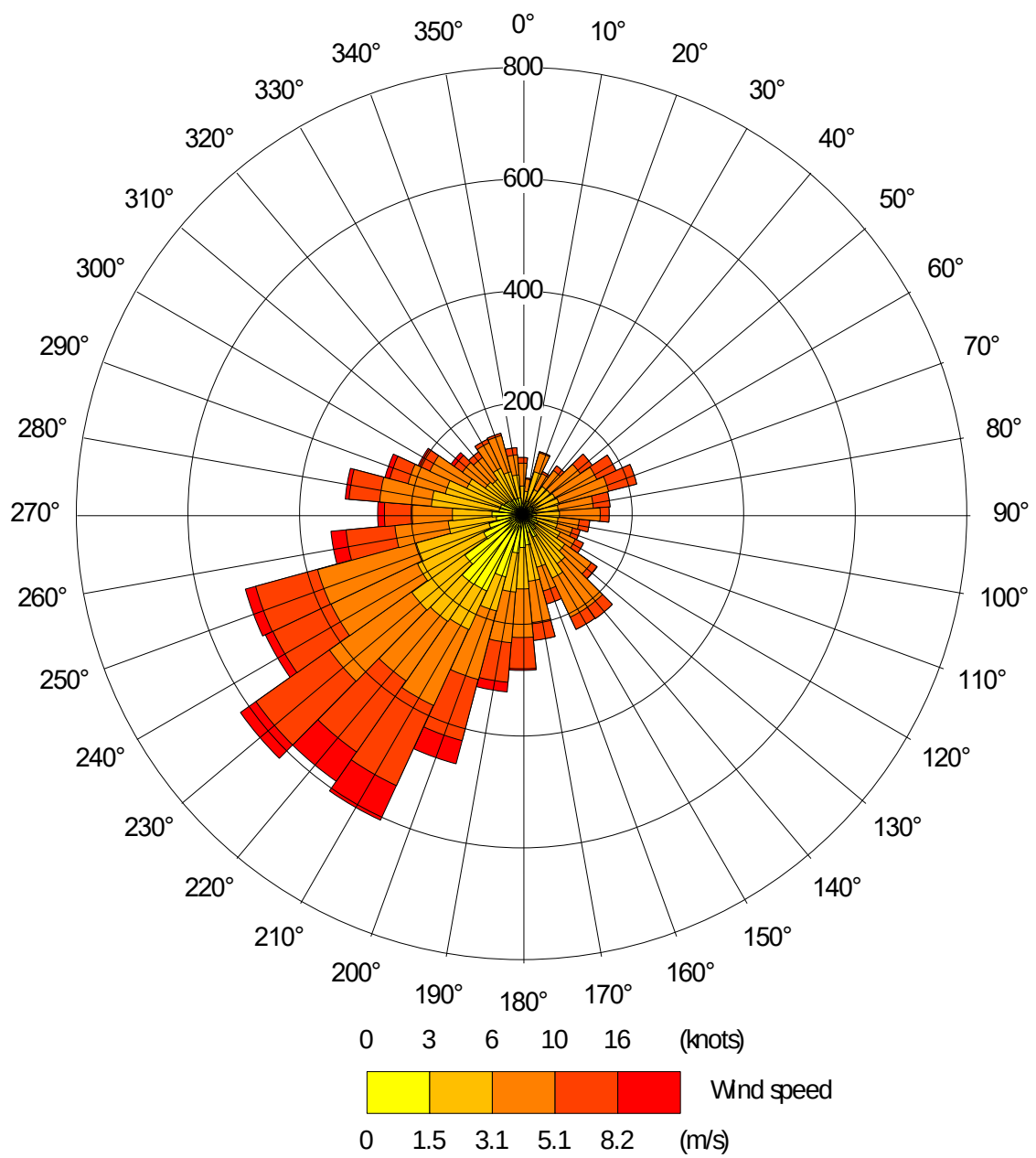
Figure 2: Construction Phase

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Figure 3: Wind Rose for Farnborough Airport, 2019



Appendix A: IAQM Highly Recommended Mitigation Measures for Low Risk Sites

Appendix A: IAQM Highly Recommended Mitigation Measures for sites with a Low Risk of Dust Impacts

Please refer to the IAQM's Construction Dust Guidance (*Guidance on the assessment of dust from demolition and construction (2014)*²⁰ and *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (2018)*²¹) for further, "desirable", mitigation measures.

Communications

- 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.

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 exception 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

- Carry out regular site inspections to monitor compliance with the Dust Management Plan, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of 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 possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Avoid site runoff of water or mud.

Operating Vehicle/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.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable

20 IAQM. (2014). *Guidance on the assessment of dust from demolition and construction*

21 IAQM. (2018). *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites*.

https://iaqm.co.uk/text/guidance/guidance_monitoring_dust_2018.pdf

dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.

- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on equipment wherever appropriate.

Waste Management

- Avoid bonfires and burning of waste materials.

Demolition

- Ensure effective water suppression is used during demolition operations. Hand-held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

