



**PLANNING STAGE AIR QUALITY ASSESSMENT**

# **ROSE KILN COURT, READING**

**REIT INDUSTRIALS LIMITED**

**FEBRUARY 2022**

# PLANNING STAGE AIR QUALITY ASSESSMENT ROSE KILN COURT, READING

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## REVISION HISTORY

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## 1 INTRODUCTION

Anderson Acoustics Ltd was commissioned by REIT Industrials Limited to undertake an air quality assessment for the proposed employment development at Rose Kiln Court, Rose Kiln Lane, Reading, RG2 0BY. The assessment has been requested to inform the design of the proposed development and determination of the planning application. The proposed development is within the Reading Air Quality Management Area (AQMA).

The scheme includes the development of 11 multi-let industrial (MLI) units with 76 parking spaces including 5 accessible parking spaces. It is understood that the units would be operational 24 hours a day, 7 days a week, though use on Sundays is likely to be lower than weekdays. The quantum of existing car parking spaces is proposed to be reduced, though the proposed development introduces Heavy Duty Vehicle movements as part of the use and so an air quality screening assessment is conducted.

The purpose of the air quality assessment is to indicate if the operation development effects road traffic emissions, in particular, that resulting from concentrations of nitrogen oxides (NO<sub>x</sub>) and particulate matter. The potential impact of building emissions is also considered.

Air quality policy and criteria relevant to the assessment have been presented and briefly discussed in Section 2 of this report. A brief description of the site and proposed development is given in Section 3. The dust risk assessment is presented in Section 4. The air quality assessment is presented in Section 5. The conclusions are provided in Section 6.

## 2 AIR QUALITY POLICY AND CRITERIA

### 2.1 Air Quality – Pollutants for Consideration

The pollutants for consideration in Reading Borough Council (RBC) are nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM).

PM<sub>10</sub> is the fraction of PM that is 10 microns or less in size and PM<sub>2.5</sub> is the fraction of PM that is 2.5 microns or less in size. Both can be drawn into the lungs and can cause respiratory illness, cardiovascular illness and mortality. Oxides of nitrogen include nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). NO<sub>2</sub> can cause inflammation of the lung and can lead to shortness of breath, coughing and can reduce immunity to infections of the lung such as bronchitis.

### 2.2 Air Quality Policy and Guidance

#### 2.2.1 European and National Air Quality Standards

Air Quality Directive 2008/50/EC<sup>1</sup> introduced legally binding “limit value” targets for the member governments to reduce air pollution to concentrations at which minimal effects on health are likely to occur.

The directive was transposed into law through the Air Quality (England) Standards Regulations<sup>2</sup> with air quality objectives and dates they were to be achieved by. The sensitive locations, at which the standards and objectives apply, are places where the population is expected to be exposed to the various pollutants over the averaging period in question. For objectives to which an annual mean standard applies, the most common sensitive receptor locations used to measure concentrations are areas of residential housing, since it is reasonable to expect that people living in their homes could be exposed to pollutants over such a period of time. 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.

**Table 2.1: Air Quality Objectives for PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>2</sub>**

| Pollutant         | Air Quality Objectives for Particulates and NO <sub>2</sub>           |              | Date to be Achieved By  |
|-------------------|-----------------------------------------------------------------------|--------------|-------------------------|
|                   | Concentration                                                         | Measured as  |                         |
| PM <sub>10</sub>  | 50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year     | 24 hour mean | 31 December 2004        |
|                   | 40 µg/m <sup>3</sup>                                                  | Annual mean  | 31 December 2004        |
| PM <sub>2.5</sub> | 25 µg/m <sup>3</sup>                                                  | Annual mean  | 2020 (but not in UKAQS) |
|                   | 15% reduction urban background                                        | Annual mean  | 2010-2020               |
| NO <sub>2</sub>   | 40 µg/m <sup>3</sup>                                                  | Annual mean  | 31 December 2005        |
|                   | 200 µg/m <sup>3</sup> not to be exceeded more than 18 hours in a year | Hourly mean  | 31 December 2005        |

<sup>1</sup> Council Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe

<sup>2</sup> DEFRA. 2010. The Air Quality Standards (England) Regulations.

The Environment Act 1995<sup>3</sup> introduced the requirement for local authority management of air quality. Part IV of this Act details the duties of local authorities in carrying out their local air quality management (LAQM) to tackle poor air quality. Part of the requirements is for the Review and Assessment of air quality and production of Updating and Screening Assessments (USA) and Annual Status Reports (ASR). Where exceedance of these objectives is shown or anticipated the local authority is required to declare an AQMA and produce an Air Quality Action Plan (AQAP) to reduce emissions and pollutant concentrations.

### 2.2.2 National and Regional Planning Policy and Guidance

The **NPPF**<sup>4</sup> presents the Government's planning policies for England and how these are expected to be applied, with the development of local and neighbourhood plans under the framework. Paragraph 174 e) of the NPPF identifies that the planning system should aim to conserve and enhance the natural and local environment by *"preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;..."*

Paragraph 186 states *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

**Planning Practice Guidance**<sup>5</sup> for air quality has been produced that gives indication of details the local authority may want to consider when there are concerns about air quality and special requirements such as the height of chimneys and securing mitigation measures through planning conditions and obligations.

**Guidance on the Assessment of Dust from Demolition and Construction**<sup>6</sup> is the IAQM produced guidance on the assessment and mitigation of dust from demolition and construction. This guidance is the standard procedure for the assessment of dust risk and development of mitigation measures.

**Land-Use Planning and Development Control: Planning for Air Quality**<sup>7</sup> is the IAQM produced guidance to ensure that air quality is adequately considered in the land-use planning and development control process and is particularly applicable for the effect of changes in exposure of the public.

### 2.2.3 Local Air Quality Guidance

Reading has an AQMA for annual mean NO<sub>2</sub> concentrations. The designated area of the AQMA is shown in Figure 2.1. The Air Quality Action was adopted by RBC in 2009 to provide measures for improving air quality in the RBC area. The updated Air Quality Action Plan<sup>8</sup> was updated in 2016 as some of the measures had been completed or superseded.

The main measure of relevance is the action that RBC *"...will ensure through the planning process that future development does not result in any further deterioration of air quality and where possible, results in an improvement in overall environmental quality"* in order to ensure that *"New development will not result in significant worsening air quality"*.

<sup>3</sup> Office of the Deputy Prime Minister. 1995. The Environment Act.

<sup>4</sup> Ministry of Housing, Communities & Local Government. 2021. National Planning Policy Framework.

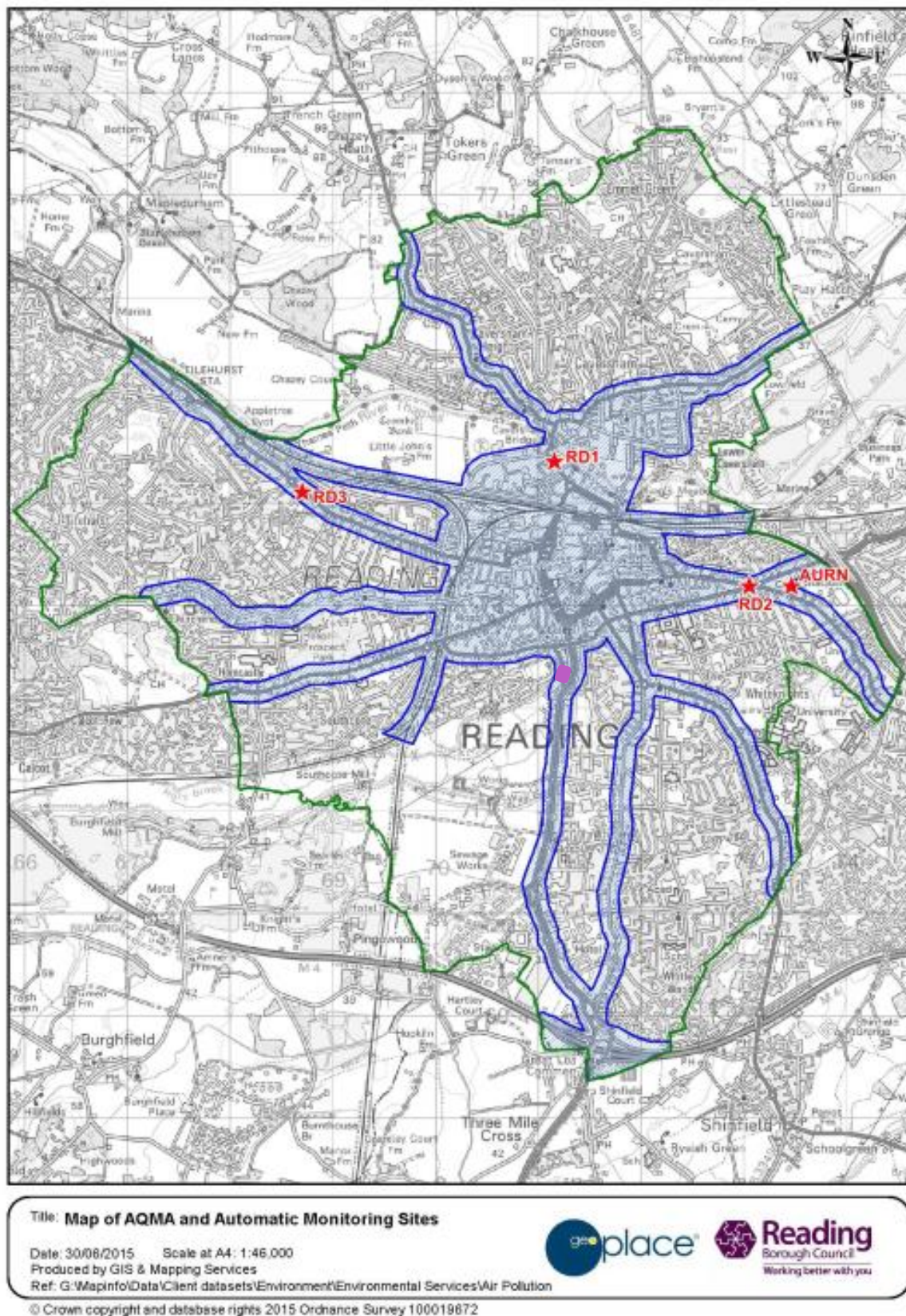
<sup>5</sup> Department for Communities and Local Government. 2014. Planning Practice Guidance – Air Quality. Revision 2019.

<sup>6</sup> IAQM. 2014. Guidance on the Assessment of Dust from Demolition and Construction.

<sup>7</sup> IAQM. 2017. Land-Use Planning and Development Control: Planning For Air Quality.

<sup>8</sup> Reading Borough Council. 2016. Air Quality Action Plan Update.

Figure 2.1. Reading Air Quality Management Area and Site Location



Key:  
 Site Location

### 3 SITE DESCRIPTION

#### 3.1 Existing Site

The subject site for this proposed development is located at Rose Kiln Court, Reading. The land use around the site is commercial and residential. The current use is offices. It is understood that applications for surrounding sites have been approved for residential use such as the Reading Link Retail Park, to the west of the application site and Cadogan House (prior approval for residential use) to the south of the site. To the northwest of the site, beyond the retail park, the land use is residential.

The access and egress for vehicles moving to and from site is Rose Kiln Lane.

The site location is shown in Figure 3.1 below.

Figure 3.1: Map showing site location



Key: Red line – site outline

#### 3.2 Proposed Development

The existing commercial building located on the site is to be demolished to make way for 10 commercial units along the eastern boundary of the site, and a single commercial units located towards the west of the site. It is understood that the proposed uses will fall into Use Class E g iii, which is defined as: “any industrial process, being a use, which can be carried out in any residential area without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit.”

The 11 units are double-storey and range from 256m<sup>2</sup> to 526m<sup>2</sup> across 2 blocks for flexible employment uses including B2/B8 and light industry (Class E g iii). These new units provide 4080m<sup>2</sup> flexible employment floorspace with parking facilities. The net additional floorspace is 660m<sup>2</sup>. The proposed development layout is presented in Figure 3.2.

Figure 3.3: Proposed development layout



## 4 DUST RISK ASSESSMENT

### 4.1 Introduction

The purpose of this assessment is to identify the category of risk from dust emission associated with the construction phases. This assessment also puts in place a suitable mitigation strategy to ensure negative impacts and adverse effects are controlled and reduced.

Dust from demolition processes contains a range of particle types and material sizes which can cause adverse effects. The pollutant of concern in this assessment is particulate matter (PM<sub>10</sub>), defined as a mass fraction of airborne particulates with an aerodynamic diameter of 10 microns or less. Particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>) are also considered.

This assessment follows the procedure in the IAQM's "Guidance on the assessment of dust from demolition and construction"

The construction phases are assessed for following:

- Demolition;
- Earthworks;
- Construction; and
- Trackout of material from vehicles egressing site.

The first step of the assessment is to conduct screening to establish if there is need to proceed to detailed assessment. A dust risk assessment usually proceeds to detailed assessment if there is a human or ecological receptor within 50 m of the boundary of the site or 50 m of the routes used by construction vehicles on the public highway, up to 500 m from the site entrances (for large sites).

The main steps are as follows:

- identify magnitude of dust emission for each of the phases the worksite;
- Identify the sensitivity of the receptors;
- Identify the sensitivity of the area;
- determine potential risk category of each works phase; and
- outline how each risk will be mitigated.

There are human health and soiling receptors within 50 m of the worksite and so the assessment proceeded to a detailed assessment and is described in the following sections. There are no ecological receptors within 50m of the worksite or its trackout route and so ecological receptors are not considered further in this assessment.

### 4.2 Dust Emission Magnitude

#### Demolition

The proposed change of use involves demolition of the existing building:

- Total building volume <20,000m<sup>3</sup>;
- Potentially dusty materials – masonry and concrete;
- Demolition activity below 10m in height.

The demolition phase dust emission magnitude is considered as **Medium**

#### Earthworks

The earthworks phase involves:

- site area 2,500 – 10,000 m<sup>2</sup>;
- <5 heavy earth moving vehicles; and

- underlain superficially by alluvium (clay, silt, sand and gravel river deposits) and beneath that the Seaford Chalk Formation And Newhaven Chalk Formation, with a moderate potential for dust when dry.

The earthworks phase dust emission magnitude is considered as **Medium**.

#### Construction

The construction phase may involve:

- potentially dusty construction materials (concrete) for base;
- steel framed buildings with low potential for dust release and
- total building volume <25,000 m<sup>3</sup>.

The construction phase dust emission magnitude is considered as **Medium**.

#### Trackout

The trackout phase involves:

- less than 10 outward Heavy Duty Vehicle (HDV) movements over unsurfaced ground per day;
- unpaved road length <50 m;

The Trackout phase dust emission magnitude is considered as **Small**.

The summary of the potential dust emission magnitude is presented in Table 4.1.

**Table 4.1 Potential Dust Emission Magnitude**

| Phase        | Dust Emission Magnitude |
|--------------|-------------------------|
| Demolition   | <b>Medium</b>           |
| Earthworks   | <b>Medium</b>           |
| Construction | <b>Medium</b>           |
| Trackout     | <b>Small</b>            |

### 4.3 Sensitivity of the Area

The next step of the assessment is to define the sensitivity of the area. The sensitivity of the area takes into account a number of factors, including:

- Specific sensitivities of receptors in the area
- The proximity and number of receptors
- Background PM<sub>10</sub> concentrations
- Site specific factors such as topography

The sensitivity is defined for:

- Dust soiling effects
- Human health effects of PM<sub>10</sub>
- Ecological effects

High sensitivity receptors for dust soiling in the vicinity of the site include dwellings and food preparation areas. High sensitivity receptors for health effects of PM<sub>10</sub> include receptors in residential areas. Ecological effects are not considered further in this assessment as there are no designated ecological receptors within 50m of the site boundary or construction route or within 500m of the site entrance.

For dust soiling effects there are between 1 and 10 high sensitivity receptors (Cadogan House residential units potentially) within 20m of the earthworks area and so the sensitivity of the area is defined as “Medium” for earthworks. For demolition and construction there are between 10 and 100 high sensitivity receptors within 100m, including those at Cadogan House, Laud Close and Admiral’s Court and so the sensitivity of the area is considered .

For human health effects the baseline annual mean PM<sub>10</sub> concentration needs to be considered. For the purpose of the dust risk assessment background PM<sub>10</sub> concentrations have been assumed as below 24 µgm<sup>-3</sup> (as 24 µgm<sup>-3</sup> PM<sub>10</sub> is the lowest baseline concentration assessment category) based on the last annual mean PM<sub>10</sub> concentration at the RBC roadside monitoring sites being below 24 µgm<sup>-3</sup> in 2016 and the Defra modelled background PM<sub>10</sub> concentrations for 2019 being below 16 µgm<sup>-3</sup>. With the background PM<sub>10</sub> concentration below 24 µgm<sup>-3</sup> and 10-100 high sensitivity residential receptors within 100 m the site the sensitivity of the area is considered as “Low” for human health effects. The sensitivity of the area is summarised in Table 4.2.

**Table 4.2 Sensitivity of the area**

| Receptor Sensitivity | Sensitivity of the surrounding area |            |              |          |
|----------------------|-------------------------------------|------------|--------------|----------|
|                      | Demolition                          | Earthworks | Construction | Trackout |
| Dust Soiling         | Medium                              | Medium     | Medium       | Medium   |
| Human Health         | Low                                 | Low        | Low          | Low      |

## 4.4 Risk of Impacts

When the dust emission magnitude is combined with the sensitivity of the area the risk of impacts with no mitigation applied can be determined. The summary of the risks assessment is presented below in Table 4.3. In summary, the site is considered a **Medium Risk** site. The dust risk is used to define the amount of site-specific mitigation that is required. The mitigation is described in Section 4.6 and Table 5.4. With the mitigation in place the effect of the construction dust is considered to be **Not Significant**.

**Table 4.3 Dust Risk Summary**

| Summary             | Demolition  | Earthworks  | Construction | Trackout   |
|---------------------|-------------|-------------|--------------|------------|
| <b>Dust Soiling</b> | Medium Risk | Medium Risk | Medium Risk  | Low Risk   |
| <b>Human Health</b> | Low Risk    | Low Risk    | Low Risk     | Negligible |

## 4.5 Dust Monitoring

The monitoring regime for the site is based on that advised in the IAQM air quality monitoring guidance<sup>9</sup> for a **Medium Risk** site. The Guidance states “Agree dust deposition, dust flux or real-time PM<sub>10</sub> continuous monitoring locations with the Local Authority”.

## 4.6 Construction Mitigation Measures

The IAQM mitigation measures for a Medium Risk site that will be followed are detailed below:

### Communications

- D1. Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- D2. Contact details of site management and person responsible for dust to be clearly displayed on the site hoarding;
- D3. Display the head or regional office contact information;
- D4. Develop a Dust Management Plan to be approved by RBC.

### Site Management

- D5. Record all dust and air quality complaints, identify causes, take appropriate measures to reduce emissions on a timely manner, and record the measures taken;
- D6. Make the complaints log available to RBC when asked;

<sup>9</sup> IAQM. Guidance on air quality monitoring in the vicinity of demolition and construction sites. 2018.

- D7. Record any exceptional incidents that cause dust and/or air emissions, on-site or off-site and actions taken to resolve the situation in the log book;  
Monitoring
- D8. Undertake daily offsite inspections within 100m of the site, with records to be kept and provided to RBC if requested and cleaning to be provided if dust soiling is attributable to site and necessary;
- D9. Regular site inspections to monitor compliance with the procedures in this mitigation section, record inspection result and make an inspection log available to RBC when asked;
- D10. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- D11. Agree dust monitoring regime with RBC  
Preparing and Maintaining the Site
- D12. Plan site layout so that machinery and dust causing activities are located away from receptors as far as possible;
- D13. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- D14. Avoid site runoff of water or mud;
- D15. Keep site fencing, barriers and scaffolding clean using wet methods;
- D16. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site;
- D17. Cover, seed or fence stockpiles to prevent wind whipping;  
Operating Vehicle/Machinery and Sustainable Travel
- D18. Ensure all vehicles switch off engines when stationary – no idling vehicles;
- D19. Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where possible;
- D20. Produce a construction logistics plan to manage the sustainable delivery of goods and materials;  
Operations
- D21. Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- D22. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- D23. Use enclosed chute and conveyors and covered skips;
- D24. Drop heights to be minimised wherever possible;
- D25. Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable;  
Waste Management
- D26. No burning of waste wood or other materials on-site;
- D27. Materials and arisings will be handled in a way that minimises emissions of dust;
- D28. Use wet sweeping (not dry);

The specific measures for each stage are provided below in Table 4.4 and cover the measures applicable for the risk of the activity phase.

**Table 4.4 IAQM Activity Specific Mitigation Measures**

| Activity   | Specific mitigation measures                                                                                                                                                          |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demolition | Soft strip inside buildings<br>Bag and remove any biological debris                                                                                                                   |
| Earthworks | Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces.<br>Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil. |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Only remove secure covers in small areas during work and not all at once.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Construction | <p>Avoid scabbling (roughening of concrete surfaces) if possible.</p> <p>Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.</p> <p>Powders kept in containers. Concrete delivered to site in wagons.</p> <p>For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.</p> |
| Trackout     | <p>Avoid dry sweeping of large areas</p> <p>Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.</p>                                                                                                                                                                                                                                                                                                                                                    |

## 5 AIR QUALITY ASSESSMENT

### 5.1 Introduction

To scope the content of the air quality assessment the impact of the development on the local area needs to be considered. The proposed development has been screened against the criteria within the “*Land-use Planning & Development Control: Planning for Air Quality*” for the need to assess the impact of the development on air quality in the local area as a result of the change in emissions from the change in traffic flows.

The screening criteria to proceed to a more detailed assessment, within or adjacent to an AQMA, is a change in Light Duty Vehicle (LDV) flows of 100 AADT or 25 AADT for Heavy Duty Vehicles (HDV) on a particular road link.

There is a reduction in parking spaces and overall flows reduce and therefore congestion. Nevertheless there is an increase in HDV flows and so the screening criteria of 25 AADT is considered.

The existing weekday flows are presented in Table 5.1.

**Table 5.1 Existing Office (Total Vehicles)**

| Time Period           | Trip Rates (100sqm) |            |         | Trips (3420sqm) |            |         |
|-----------------------|---------------------|------------|---------|-----------------|------------|---------|
|                       | Arrivals            | Departures | Two-Way | Arrivals        | Departures | Two-Way |
| AM Peak (08:00-09:00) | 1.155               | 0.124      | 1.279   | 40              | 4          | 44      |
| PM Peak (17:00-18:00) | 0.126               | 1.031      | 1.157   | 4               | 35         | 40      |
| Daily (07:00-19:00)   | 4.059               | 4.195      | 8.254   | 139             | 143        | 282     |
| 24 Hour               | 4.059               | 4.195      | 8.254   | 139             | 143        | 282     |

The weekday flows associated with the proposed development are presented in Table 5.2.

**Table 5.2 Proposed Use Flows (Total Vehicles)**

| Time Period           | Trip Rates (100sqm) |            |         | Trips (4080sqm) |            |         |
|-----------------------|---------------------|------------|---------|-----------------|------------|---------|
|                       | Arrivals            | Departures | Two-Way | Arrivals        | Departures | Two-Way |
| AM Peak (08:00-09:00) | 0.393               | 0.089      | 0.482   | 16              | 4          | 20      |
| PM Peak (17:00-18:00) | 0.024               | 0.286      | 0.310   | 1               | 12         | 13      |
| Daily (07:00-19:00)   | 1.925               | 1.983      | 3.908   | 79              | 81         | 159     |
| 24 Hour               | 3.040               | 3.041      | 6.081   | 124             | 124        | 248     |

The change in weekday flows associated with the proposed development are presented in Table 5.3.

**Table 5.3 Change In Flows (Development Impact)**

| Time Period           | Arrivals | Departures | Two-Way |
|-----------------------|----------|------------|---------|
| AM Peak (08:00-09:00) | -23      | -1         | -24     |
| PM Peak (17:00-18:00) | -3       | -24        | -27     |
| Daily (07:00-19:00)   | -60      | -63        | -123    |
| 24 Hour               | -15      | -19        | -34     |

The HDV movements need to be considered and these are presented in Table 5.4.

**Table 5.4 HDV Weekday Flows**

| Time Period           | Trip Rates (100sqm) |            |         | Trips (4080sqm) |            |         | Trips %  |            |         |
|-----------------------|---------------------|------------|---------|-----------------|------------|---------|----------|------------|---------|
|                       | Arrivals            | Departures | Two-Way | Arrivals        | Departures | Two-Way | Arrivals | Departures | Two-Way |
| AM Peak (08:00-09:00) | 0.026               | 0.017      | 0.043   | 1               | 1          | 2       | 6.6%     | 19.1%      | 8.9%    |
| PM Peak (17:00-18:00) | 0.000               | 0.000      | 0.000   | 0               | 0          | 0       | 0.0%     | 0.0%       | 0.0%    |
| Daily (07:00-19:00)   | 0.241               | 0.241      | 0.482   | 10              | 10         | 20      | 12.5%    | 12.2%      | 12.3%   |
| 24 Hour               | 0.381               | 0.370      | 0.750   | 16              | 15         | 31      | 12.5%    | 12.2%      | 12.3%   |

To consider the impact of the HDV movements the flows on individual links need to be considered. The link distribution is presented in Table 5.5.

**Table 5.5 HDV Route Flow Change for 31 HDVs**

| Route                | %     | Out of 31 HDVs |
|----------------------|-------|----------------|
| Rose Kiln Lane North | 27.6% | 8.6            |
| Rose Kiln Lane South | 72.4% | 21.7           |

With AADT flows of under 25 of each link the screening criteria of 25 HDV movements on a road link is not met and the assessment does not need to proceed to further assessment of the impact of the development and the effect can be evaluated using the “Simple” assessment procedure.

Building emissions are not considered significant as no combustion plant is proposed as part of the development.

The air quality assessment uses published pollutant concentrations that are supplied by the RBC Annual Status Report<sup>10</sup> and the Defra UK Ambient Air Quality Interactive Map<sup>11</sup> NO<sub>2</sub> concentrations for the site of the proposed development.

These concentrations have been evaluated using the “Simple” assessment procedure in the “Planning for air quality” guidance. The receptors considered are those introduced by the proposed development, on the ground floor at the closest façade as a worst case. The criteria in Table 5.6 has been used to describe the impact of introduction of receptors by the proposed development.

**Table 5.6 Assessment Criteria Impact Descriptors for Individual Receptors**

| Annual Mean pollutant concentration in assessment year | % Change in concentration relative to Air Quality Assessment Level (AQAL) – NO <sub>2</sub> and PM <sub>10</sub> annual mean |             |             |             |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|
|                                                        | 1                                                                                                                            | 2-5         | 6-10        | >10         |
| 75% or less of AQAL                                    | Negligible                                                                                                                   | Negligible  | Slight      | Moderate    |
| 76-94% or less of AQAL                                 | Negligible                                                                                                                   | Slight      | Moderate    | Moderate    |
| 95-102% or less of AQAL                                | Slight                                                                                                                       | Moderate    | Moderate    | Substantial |
| 103-109 % or less of AQAL                              | Moderate                                                                                                                     | Moderate    | Substantial | Substantial |
| 110% or more of AQAL                                   | Moderate                                                                                                                     | Substantial | Substantial | Substantial |

Note: Where the predicted change is less than 0.5% the impact descriptor is negligible.

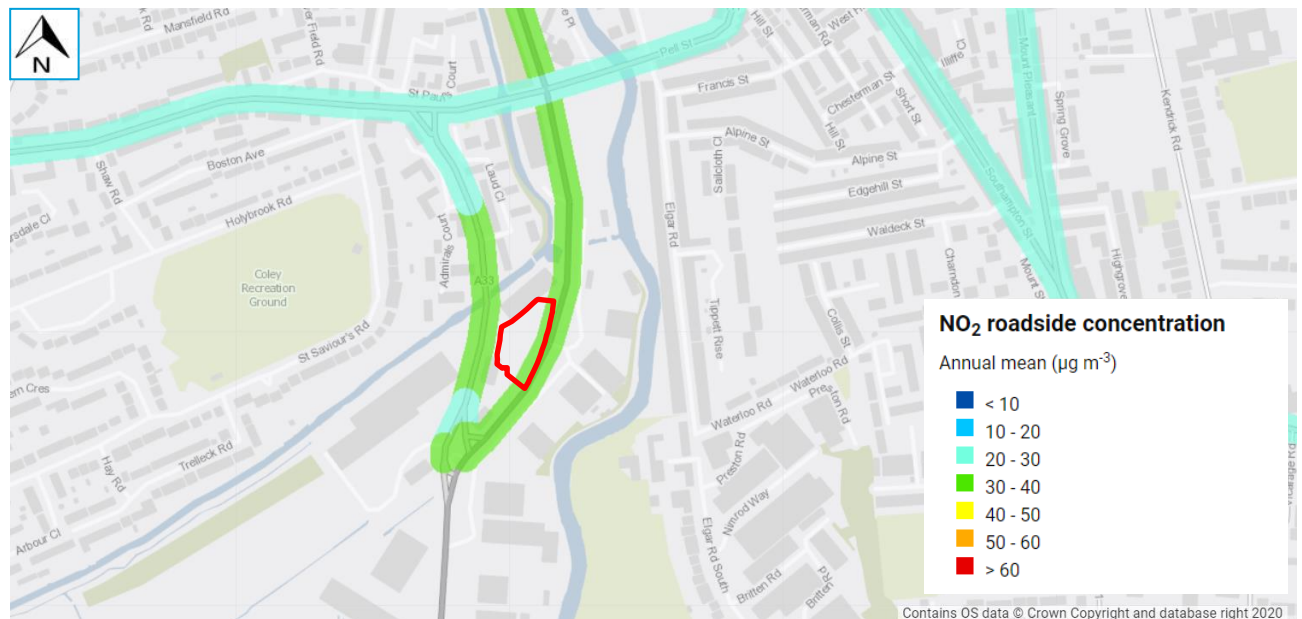
<sup>10</sup> [Reading Borough Council. 2020 Air Quality Annual Status Report](#). 2021.

<sup>11</sup> Defra. UK Ambient Air Quality Interactive Map. 2019.

## 5.2 Impacts

With a modelled annual mean NO<sub>2</sub> concentration of below 40 µg m<sup>-3</sup> (shown in Figure 5.1) and the change in % concentration below 1% the impact descriptor for the effect of the emissions from the proposed development is considered **"Negligible"**. PM<sub>10</sub> concentrations are well below the annual mean PM<sub>10</sub> objective. RBC ceased monitoring with NO<sub>2</sub> diffusion tubes at the junction of Berkeley Avenue and Rose Kiln Lane in 2009 as the measured concentrations were consistently below the annual mean NO<sub>2</sub> objective.

Figure 5.1. Defra 2017 modelled annual mean NO<sub>2</sub> concentrations



Key:  Proposed development site.

The location of the proposed development is considered suitable for the proposed development use considering the potential air quality effects.

PM<sub>10</sub> concentrations are understood to be well below the objectives.

## 5.3 Significance of Air Quality Impacts and Effects

As the screening criteria for further assessment is not met the effect of the road transport movements to and from the proposed development is considered as a **"Not Significant"** and that the impact descriptor at sensitive receptors is considered **"Negligible"**.

## 5.4 Mitigation Statement

Mitigation for the impact of the development on the environment on the development has been applied on a precautionary basis.

To minimise the potential impact of the development on the environment the following mitigation is proposed:

- provision for secure bicycle storage;
- electrical plant rather than combustion plant (to be secured by tenancy agreement);
- car parking allocation is less than RBC maximum requirements; and
- electric vehicle charging points for 10% of parking bays.

## 6 CONCLUSIONS

Anderson Acoustics Ltd was commissioned by REIT Industrials Limited to undertake an air quality assessment for the proposed Land Use Class E(g) (iii) development of 11 multi-let industrial (MLI) units with 76 parking spaces including 5 accessible parking spaces. The site is considered suitable for the proposed development in terms of air quality and does not harm the amenity of the area in terms of grit, dust and fumes and so is considered compliant with the Land Use Class E(g) (iii).

The dust risk assessment indicated the site is a medium risk site and mitigation measures are proposed and with the mitigation measures for a medium risk site in place the demolition and construction works are considered as **“Not Significant”**.

The AADT flows of the proposed development does not meet the screening criteria for detailed assessment and so the impact of the development on existing receptors is considered **“Negligible”** and the effect is **“Not Significant”**.

The proposed development is considered suitable for the site and compliant with planning policy in matters of air quality.