

# LAND AT HAVERHILL ROAD, STAPLEFORD, CAMBRIDGESHIRE

**Proposed Retirement Village**

**Air Quality Assessment**

Prepared for: Axis Land Partnership Ltd

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## 1.0 INTRODUCTION

SLR Consulting Ltd has been commissioned by Axis Land Partnership Ltd to undertake an Air Quality Assessment for a proposal comprising the redevelopment of land to the west of Haverhill Road, Stapleford for a retirement village (the proposed development).

The assessment describes the scope, relevant legislation, assessment methodology and the baseline conditions currently existing in the area. It then presents the potential impacts of the scheme and an evaluation of the significance of the effects.

### 1.1 Summary of Proposed Development

The proposed development would comprise a care home and self-contained apartments. The primary access would be taken from Haverhill Road, with a secondary access for pedestrians, cyclists and emergency vehicles use off Gog Magog Way.

A description of the proposed development is as follows:

*'Outline planning application (with all matters reserved apart from access) for the development of land for a retirement care village in Use Class C2 comprising housing with care, communal health, wellbeing and leisure facilities, public open space, landscaping, car parking, access and associated development and the provision of land for use as a countryside park for public access'*

A detailed description of the proposed development is included within the Planning Application documentation.

### 1.2 Scope of Assessment

The scope of assessment has been informed on the basis of *Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (SPD)*, January 2020, and comprises:

- Baseline Evaluation – Assessment of existing air quality in the local area;
- Construction Phase Assessment – Identification and assessment of potential air quality impacts and effects associated with the construction phase of the proposed scheme, primarily dust impacts and suspended particulate matter with an aerodynamic diameter of less than 10 micrometres (PM<sub>10</sub>);
- Traffic Emissions Screening Assessment – Screening of potential impacts and effects from traffic associated with the operational phase of the proposed scheme; and
- Mitigation Measures – Identification of appropriate mitigation measures.

## 2.0 AIR QUALITY LEGISLATION, POLICY AND GUIDANCE

### 2.1 Air Quality Standards Regulations

The Air Quality Standards Regulations 2010 (the regulations) transpose the Ambient Air Quality Directive (2008/50/EC), and transpose the Fourth Daughter Directive (2004/107/EC) within UK legislation. The regulations include Limit Values, Target Values, Objectives, Critical Levels and Exposure Reduction Targets for the protection of human health and the environment (collectively termed Air Quality Assessment Levels (AQAL) throughout this report). Those relevant to this Air Quality Assessment are presented within Table 2-1.

**Table 2-1**  
**Relevant Air Quality Assessment Levels**

Pollutant	Standard ( $\mu\text{g}/\text{m}^3$ )	Measured as	
Nitrogen dioxide ( $\text{NO}_2$ )	40	Annual mean	-
	200	1 hour mean	Not to be exceeded more than 18 times a calendar year
Particulate matter with an aerodynamic diameter of less than $10\mu\text{m}$ ( $\text{PM}_{10}$ ) (gravimetric)	40	Annual mean	-
	50	24 hour mean	Not to be exceeded more than 35 times a calendar year

### 2.2 Air Quality Strategy

The United Kingdom Air Quality Strategy (UK AQS) for England, Scotland, Wales and Northern Ireland<sup>1</sup>, last updated in 2007, sets out the Government's policies aimed at delivering cleaner air in the United Kingdom (UK). It sets out a strategic framework within which air quality policy will be taken forward in the short to medium term, and the roles that Government, industry, the Environment Agency (EA), local government, business, individuals and transport have in protecting and improving air quality.

### 2.3 Local Air Quality Management

Section 82 of the Environment Act 1995 (Part IV) requires local authorities to periodically review and assess the quality of air within their administrative area. The reviews have to consider the present and future air quality and whether any AQALs prescribed in regulations are being achieved or are likely to be achieved in the future.

Where any of the prescribed AQALs are not likely to be achieved the authority concerned must designate an Air Quality Management Area (AQMA). For each AQMA the local authority has a duty to draw up an Air Quality Action Plan (AQAP) setting out the measures the authority intends to introduce to deliver improvements in local air quality in pursuit of the AQAL. As such, Local Authorities (LAs), have formal powers to control air quality through a combination of LAQM and by use of their wider planning policies.

<sup>1</sup> The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA. July 2007.

## 2.4 General Nuisance Legislation

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

Fractions of dust greater than 10µm (i.e. greater than PM<sub>10</sub>) in diameter typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the UK AQS. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.

## 2.5 Planning Policy

### 2.5.1 National Policy

The 2019 update to the National Planning Policy Framework (NPPF) describes the policy context in relation to pollutants, with specific reference to air quality its states:

*“Para 170: Planning policies and decisions should contribute to and enhance the natural and local environment by:*

*e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of [...] air [...] pollution [...]. Development should, wherever possible, help to improve local environmental conditions such as air [...] quality [...].’*

*‘Para 180: Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.’*

Specifically, in terms of development with regards to air quality:

*‘Para 181: 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.’*

The NPPF is accompanied by web based supporting Planning Practice Guidance (PPG) which includes guiding principles on how planning can take account of the impacts of new development on air quality. In regard to air quality, the PPG states:

*“Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with EU Limit Values [...] It is important that the potential impact of new development on air quality is taken into account [...] where the national assessment indicates that relevant limits have been exceeded or are near the limit.”*

*“Whether or not air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to generate air quality impact in an area*

*where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation (including that applicable to wildlife)."*

The PPG sets out the information that may be required within the context of a supporting air quality assessment, stating that *"assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality [...] Mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact"*.

The policies within the NPPF and accompanying PPG in relation to air pollution are considered within this Air Quality Assessment.

## 2.5.2 South Cambridgeshire Local Development Framework

### South Cambridgeshire Development Plan

The South Cambridgeshire Local Plan was adopted on 27 September 2018. Together, the South Cambridgeshire Local Plan (Sep 2018) and the Adopted Policies Map (Sep 2018) replace the Core Strategy DPD (Jan 2007).

### South Cambridgeshire Local Plan (adopted September 2018)

South Cambridgeshire District Council adopted their Local Plan in September 2018, updating and replacing the previous South Cambridgeshire Local Development Framework. The Local Plan sets a framework for new development to meet the needs of the area, setting out planning policies and land allocations to guide the future development of the district up to 2031. Policies of relevance to this assessment include:

#### Policy SC/12: Air Quality

1. *Where development proposals would be subject to unacceptable air quality standards or would have an unacceptable impact on air quality standards they will be refused;*
2. *Where emissions from the proposed development are prescribed by EU limit values or national objectives, the applicant will need to assess the impact on local air quality by undertaking an appropriate air quality assessment and detailed modelling exercise having regard to guidance current at the time of the application to show that the national objectives will still be achieved;*
3. *Development will not be permitted where it would adversely affect air quality in an Air Quality Management Area (AQMA); or lead to the declaration of a new AQMA through causing a significant deterioration in local air quality by increasing pollutant levels either directly or indirectly; or if it would expose future occupiers to unacceptable pollutant levels;*
4. *Larger development proposals that require a Transport Assessment and a Travel Plan as set out in Policy TI/2 will be required to produce a site based Low Emission Strategy. This will be a condition of any planning permission given for any proposed development which may result in the deterioration of local air quality and will be required to ensure the implementation of suitable mitigation measures;*
5. *Development will be permitted where:*
  - a. *It can be demonstrated that it does not lead to significant adverse effects on health, the environment or amenity from emissions to air; or*
  - b. *Where a development is a sensitive end use, that there will not be any significant adverse effects on health, the environment or amenity arising from existing poor air quality.*
6. *Specifically applicants must demonstrate that:*
  - c. *There is no adverse effect on air quality in an Air Quality Management Area (AQMA) from the development;*
  - d. *Pollution levels within the AQMA will not have a significant adverse effect on the proposed use / users;*
  - e. *The development will not lead to the declaration of a new AQMA;*

- f. The development will not interfere with the implementation of and should be consistent with the current Air Quality Action Plan;*
  - g. The development will not lead to an increase in emissions, degradation of air quality or increase in exposure to pollutants at or above the health based air quality objective;*
  - h. Any impacts on the proposed use from existing poor air quality, are appropriately mitigated;*
  - i. The development promotes sustainable transport measures and use of low emission vehicles in order to reduce the air quality impacts of vehicles.*
7. *Applicants shall, where appropriate, prepare and submit with their application, a relevant assessment, taking into account guidance current at the time of the application.*

The Joint Air Quality Action Plan for Huntingdonshire, Cambridge City and South Cambridgeshire incorporates priority actions for tackling air quality issues throughout the land use planning process. It identifies that low site based low emission strategies can help minimise emissions from developments, by integrating design and low emissions transport related measures such as travel to work plans, residential travel plans, priority parking for low emission vehicles and provision of infrastructure for recharging electric vehicles.

## 2.6 Assessment Guidance

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

### 2.6.1 Defra 'LAQM.TG(16)'

Defra Local Air Quality Management Technical Guidance<sup>2</sup> (LAQM.TG(16)) was published for use by local authorities in their LAQM review and assessment work. The document provides key guidance in aspects of air quality assessment, including screening, use of monitoring data, and use of background data that are applicable to all air quality assessments.

### 2.6.2 EPUK-IAQM 'Air Quality Guidance for Planning'

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have together published guidance<sup>3</sup> to help ensure that air quality is properly accounted for in the development control process. It clarifies when an air quality assessment should be undertaken, what it should contain, and how impacts should be described and assessed including guidelines for assessing the significance of impacts.

### 2.6.3 IAQM 'Construction and Demolition Dust Guidance'

Guidance on the assessment of dust from demolition and construction has been published by the IAQM<sup>4</sup>. The guidance provides a series of matrices to determine the risk magnitude of potential dust sources associated with construction activities in order to identify appropriate mitigation measures that are defined within further IAQM guidance.

### 2.6.4 Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (SPD)

The Greater Cambridgeshire Sustainable SPD sets out standards required to meet the policies of the South Cambridgeshire Local Plan, with specific guidance on how policies should be implemented to ensure the environmental impact on the area is minimised. The sustainability checklist provides criteria for when an Air Quality Assessment is likely to be required.

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<sup>2</sup> Defra Local Air Quality Management Technical Guidance (2016).

<sup>3</sup> Environmental Protection UK and Institute of Air Quality Management, 'Land-Use Planning and Development Control: Planning for Air Quality', 2017.

<sup>4</sup> Institute of Air Quality Management (IAQM), Guidance on the assessment dust from demolition and construction (2016).

**Table 2-2**  
**Sustainability Checklist – Requirement for an Air Quality Assessment**

Will the development require an Environmental Impact Assessment?
Is the development part of a large scale major redevelopment that might result in long-term construction generating HGV flows more than 100 movements per day and/or demolition and construction dust?
Will the development significantly alter the road or rail network?
Will the development significantly alter flows or speeds on busy roads greater than 10,000 vehicles per day or any road within an AQMA? Where 'significantly' is defined as including any of the following: Change in average speeds of 5kph / significant increase in congestion; A change in modal split of % HDVs A change in PSV and/or HDV flows more than 25 AADT (within / adjacent to an AQMA) or 100 AADT elsewhere Cause a significant change in LDV traffic flows on local roads with relevant receptors. A change of LDV traffic flows of more than 100 AADT within or adjacent to an AQMA or 500 AADT elsewhere.
Does the development provide more than 50 new car parking spaces? Or more than 25 if within an AQMA?
Does the development have an underground car park with extraction system where the ventilation extraction will be within 20m of a relevant receptor coupled with movements more than 100 per day;
Is the development within an AQMA and a sensitive development?
Is the development a sensitive development close to an existing prescribed process or other source of air pollution such as a busy road?
May the development create a street canyon or reduce dispersion of pollutants?
Does the energy strategy for your proposal introduce Combined heat and power (CHP) plant, other centralised boilers or generators? Do these conform with the emission standards set out in Appendix 3 of the SPD?

## 3.0 METHODOLOGY

### 3.1 Construction Dust Assessment

The assessment has been undertaken with reference to IAQM 'Guidance on the assessment of dust from construction and demolition'. The assessment of risk is determined by considering the risk of dust effects arising from four activities in the absence of mitigation:

- demolition;
- earthworks;
- construction; and
- track-out.

The assessment methodology considers three separate dust impacts with account being taken of the sensitivity of the area that may experience these effects:

- annoyance due to dust soiling;
- the risk of health effects due to an increase in exposure to PM<sub>10</sub>; and
- harm to ecological receptors.

The first stage of the assessment involves a screening to determine if there are sensitive receptors within threshold distances of the site activities associated with the construction phase of the scheme. No further assessment is required if there are no receptors within a certain distance of the works; 350m for human receptors and 50m for designated ecological receptors.

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

Descriptors for magnitude of impact and impact significance used in this assessment of construction phase dust are freely available in the guidance from the IAQM website and not reproduced in this report.

### 3.2 Traffic Emissions Screening Assessment

The Greater Cambridgeshire SPD provides a sustainability checklist for when a detailed assessment of traffic emissions is required in support of a planning application. The proposed development has been reviewed against the checklist.



## 4.0 BASELINE ENVIRONMENT

### 4.1 Site Setting and Receptors

The site is located on the western side of Haverhill Road, on the north-eastern fringe of the village of Stapleford, approximately 1km to the north-east of the A1303. Stapleford lies 8km south of Cambridge City Centre. The site measures approximately 24 hectares, is broadly rectangular in shape and is relatively flat rising very gently towards the north. The site is currently in agricultural use.

The proposed development is bounded by Haverhill Road to the south-east, residential properties that front onto Gog Magog Way to the south-west, and by open fields to the north and east, as illustrated in Figure 4-1.



**Figure 4-1**  
**Site Setting**

A review using the Magic web-based mapping service<sup>5</sup> was undertaken to identify statutory designated sites of ecological or nature conservation importance (Special Areas of Conservation, Special Protection Areas or Sites of Special Scientific Interest) within 50m of the Application Site boundary that could potentially be affected by dust from the construction phases of the proposed development or within 200m of affected traffic routes. The review indicates there are no such sites in proximity to the site, the closest statutory designated site is the Gog Magog Golf Course Site of Special Scientific Interest (SSSI) located approximately 1.7km to the north east

<sup>5</sup> Natural England, [www.magic.gov.uk](http://www.magic.gov.uk), accessed March 2020



## 4.2 Local Air Quality Management

Air Quality issues in South Cambridgeshire have been linked directly to the volume of traffic that runs through the district, specifically along the A14. Regular congestion of traffic between bar Hill and Milton has resulted in the declaration of an AQMA along the A14 Corridor on the basis of NO<sub>2</sub> (annual) and PM<sub>10</sub> (24-hour) concentrations. The A14 Corridor AQMA is located approximately 10km north of the Application Site. As stated within the SCDC Annual Status Report (ASR, 2019) monitoring using automatic and passive monitors within the AQMA have shown a decreasing trend in pollution levels and have remained below the national objective levels for the past 5 years.

Cambridge City Council have declared an AQMA encompassing the inner ring road and all land within on the basis of annual NO<sub>2</sub> concentrations. The CCC AQMA is located approximately 4.5km north of the Application Site.

SCDC undertake non-automatic (passive) monitoring of NO<sub>2</sub> at 27 sites and automatic monitoring for NO<sub>2</sub> and PM<sub>10</sub> at 2 sites according to the most recent LAQM report<sup>6</sup>. The report shows that results for all sites remain below the annual mean AQAL for NO<sub>2</sub> in 2018. Monitoring undertaken in the vicinity of the application site is described in Section 4.3.

## 4.3 Baseline Air Quality

### 4.3.1 Monitoring Data

Monitoring on the closest roads includes 3 diffusion tube monitoring locations (see Figure 4-2). The annualised results are presented in Table 4-1 below. The monitoring results show that baseline concentrations are below the AQAL at all locations.

**Table 4-1**  
**Diffusion Tube Monitoring Results**

Ref.	Description	Relevant exposure? (or distance to)	Site Classification (see table note)	2016 Bias Adjusted Annual Mean (µg/m <sup>3</sup> )	2017 Bias Adjusted Annual Mean (µg/m <sup>3</sup> )	2018 Bias Adjusted Annual Mean (µg/m <sup>3</sup> )
DT17	5 Mill Lane, Sawston	15m	Roadside	16.4	14.1	13.1
DT8N	47 High Street, Harston	5m	Roadside	-	-	17.3
DT29	Co-op, High Street	14m	Urban Background	12.5	11.0	10.0

Table Notes:

(A) Bias corrected.

(B) Roadside sites defined as 'a site sampling typically within one to five metres of the kerb of a busy road'.

(C) Urban Background sites are defined as 'An urban location distanced from sources and therefore broadly representative of city-wide background conditions, e.g. urban residential areas'.

<sup>6</sup> South Cambridgeshire District Council, LAQM Annual 2019 Air Quality Annual Status Report (ASR) (June 2019).



**Figure 4-2**  
**AQMA Boundaries and Diffusion Tubes Locations**

### 4.3.2 Defra Modelled Background and Projections

Background pollutant concentration data on a 1km x 1km spatial resolution is provided by DEFRA through the UK Air Information Resource (AIR) website and is routinely used to support LAQM and Air Quality Assessments. Mapped background concentrations of NO<sub>2</sub> and PM<sub>10</sub> were downloaded for the grid squares containing the Application Site and the operational phase receptor locations, based upon the 2017 base year DEFRA update (May 2019 publication)<sup>7</sup>.

The projected annual mean backgrounds for 2020 and 2022 (the earliest anticipated opening year of the development) are presented in Table 4-2.

<sup>7</sup> Background mapping data for local authorities – <http://uk-air.defra.gov.uk/data/laqm-background-home>, accessed March 2020.

**Table 4-2**  
**Annual Mean Background Concentrations ( $\mu\text{g}/\text{m}^3$ )**

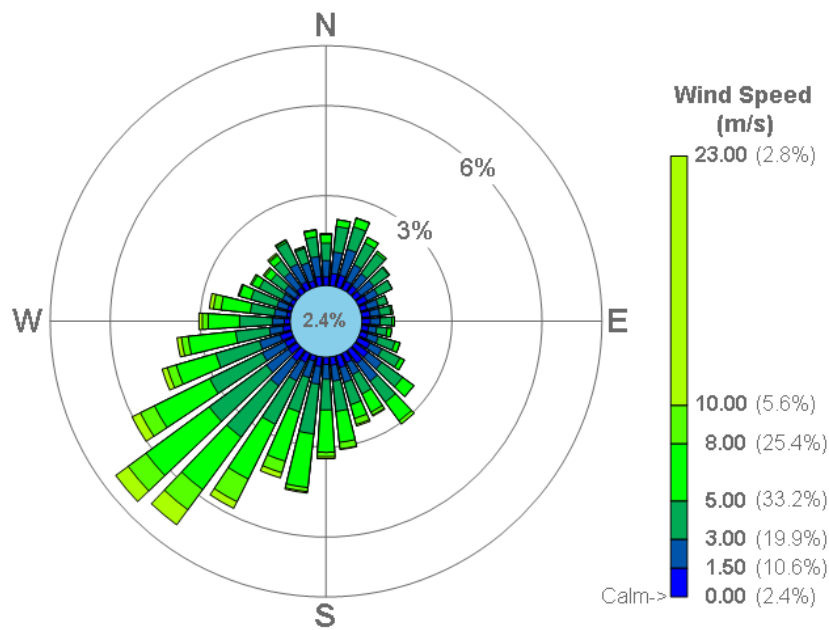
547500, 252500	2020	2022
$\text{NO}_2$ ( $\mu\text{g}/\text{m}^3$ )	8.49	7.89
$\text{PM}_{10}$ ( $\mu\text{g}/\text{m}^3$ )	14.9	14.6

## 4.4 Meteorology

The most important climatic parameters affecting atmospheric dispersion are:

- wind direction: which determines the broad direction in which emissions are dispersed; and
- wind speed: which affects ground level concentrations by increasing the initial dilution of pollutants in the emission.

A wind rose for the area is presented in Figure 4-3. It is evident that the majority of winds are from the south-west sector with winds from the north east sector occurring least frequently.



**Figure 4-3**  
**Cambridge Windrose**

## 5.0 CONSTRUCTION PHASE ASSESSMENT

This section presents the potential air quality impacts and effects associated with the construction of the development in terms of dust and vehicle emissions.

### 5.1 Construction Dust Assessment

Construction activities will include:

- material export and import;
- temporary stockpiling of materials;
- groundwork for foundations and services;
- construction of buildings;
- landscaping works;
- vehicle movements (with the potential to track-out material from site).

The following subsections provide a consideration of potential construction dust and conclude with a determined emission class and risk category, from each of the categories identified by the IAQM Guidance.

#### 5.1.1 Assessment Screening

There are ‘human receptors’ within 350m of the Site but no designated habitat sites within 50m of the Site boundary or within 50m of the Site entrance. Therefore, an assessment of construction dust on ecological receptors can be screened out from this assessment but an assessment of construction dust at human receptors is required.

#### 5.1.2 Potential Dust Emission Magnitude

Dust is potentially generated by the action of heavy vehicles (bulldozer, front-end loader, hydraulic excavator, and dump trucks), as well as by the movement of the vehicles on potentially dusty surfaces. Handling and storage of construction materials (aggregates/hard core), haulage across unsurfaced areas are also potential sources of dust generation. The potential dust emission magnitude for each activity is described in Table 5-1.

**Table 5-1**  
**Potential Dust Emission Magnitude**

Activity	Comments	Dust Emission Magnitude
Earthworks	The total site area at approximately 40,000m <sup>2</sup> , it has been assumed that the soil is potentially dusty. Limited excavation is required, e.g. for services and foundations etc, and no bund construction is required. It has been assumed, given the area, that less than 5 earth moving vehicles would be in use at any one time.	Medium
Construction	The building volume requiring construction can be classified as medium (25,000m <sup>3</sup> to 100,000m <sup>3</sup> ). Typical construction methods will be employed and construction materials are considered potentially dusty such as concrete would be used.	Medium

Activity	Comments	Dust Emission Magnitude
Trackout	The potential for trackout is considered likely to be within the medium classification with between 10 and 50 HGV maximum outward movements per day and vehicles tracking over unpaved road lengths of between 50 and 100m	Medium

### 5.1.3 Sensitivity of the Area

The sensitivity of the area takes account of a number of factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM<sub>10</sub>, the local background concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

The sensitivity of the area and the factors considered are presented in Table 5-2.

**Table 5-2**  
**Sensitivity of the Area**

Sensitivity to:		Comments	Sensitivity
Dust Soiling Impacts	Earthworks and Construction	The surroundings comprise residential properties that are classified as of high sensitivity to dust soiling. There are more than 10 high sensitivity receptors within 20m.	High
	Trackout	There are more than 10 high sensitivity receptors within 50m.	Medium
Human Health Impacts	Earthworks and Construction	The Defra 2020 background is 8.49µg/m <sup>3</sup> (i.e. falls into the <24µg/m <sup>3</sup> class) and there are less than 100 receptors within 20m.	Low
	Trackout	There are more than 10 high sensitivity receptors within 50m.	Low

### 5.1.4 Risk of Impacts (Unmitigated)

The outcome of the assessment of the potential 'magnitude of dust emissions', and the 'sensitivity of the area' are combined in the table below to determine the risk of impact which is used to inform the selection of appropriate mitigation.

**Table 5-3**  
**Risk of Dust Impacts**

Potential Impact		Demolition	Earthworks	Construction	Trackout
	Magnitude :	N/A	Medium	Medium	Medium
	Sensitivity				
Dust Soiling Impacts	High / Medium	N/A	Medium Risk	Medium Risk	Low Risk



Potential Impact		Demolition	Earthworks	Construction	Trackout
Human Health Impacts	Low	N/A	Low Risk	Low Risk	Low Risk

### 5.1.5 Construction Phase Mitigation

In order to control potential impacts, the mitigation measures presented within Table 5-4 are recommended for implementation in accordance with IAQM guidance. With the effective application of the dust mitigation measures it is considered that the impacts at all receptors will be ‘not significant’.

**Table 5-4  
Construction Dust Mitigation Measures**

Site Application	Mitigation Measures
Communications	Develop and implement a stakeholder communications plan that includes community engagement before work commences on the site
	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary
	Display the head or regional office contact information
	Develop and implement a dust management strategy
Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken
	Make the complaints log available to the local authority when asked
	Record any exceptional incidents that cause dust and / or air quality 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 the log book available to the local authority when asked
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out
Preparing and Maintaining the Site	Plan site layout so machinery is located away from receptors as far as possible
	Erect solid barriers around dusty activities or the site boundary
	Fully enclose specific operations where there is a high potential for dust production
	Avoid site runoff of water or mud
	Keep site fencing, barriers and scaffolding clean using wet methods
	Remove all materials that have the potential to produce dust from site as soon as possible
	Cover, seed or fence stockpiles to prevent wind whipping

Site Application	Mitigation Measures
Operating machinery and sustainable travel / Vehicle and	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
	Produce a Constructions Logistics Plan to manage the sustainable delivery of goods and materials
	Any diesel-powered machines must be run on ultra-low Sulphur diesel
Operations	Include speed restrictions on internal construction roads
	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction
	Ensure an adequate water supply on the site for effective dust / particulate matter suppression / mitigation
	Use enclosed chutes and conveyors and covered skips
	Minimise drop heights
	Ensure equipment is readily available on site to clean any dry spillages
Waste Management	Avoid bonfires and burning of waste materials
Earthworks & Construction	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
	Stockpiles to be located away from the southeastern boundary
	Stockpiles to be covered and / or damped down as required
	Stockpiles to be below the height of the site hoarding
Trackout	Use water-assisted dust sweepers on the access and local roads
	Avoid dry sweeping of large areas
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport
	Inspect onsite haul routes for integrity and instigate any necessary repairs to the surface as soon as reasonably practicable
	Record all inspections of haul routes and any subsequent action in a site log book
	Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems
	Implement a wheel washing system
	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the exit, wherever site size and layout permits
Access gates to be located at least 10m from receptors where possible	

## 5.2 Construction Phase Plant Emissions

The following controls should apply to NRMM:

- plant shall be well maintained; if any emissions of dark smoke occur then the relevant machinery should stop immediately and any problem rectified;
- all NRMM should use fuel equivalent to ultralow sulphur diesel;
- all NRMM should comply with either the current or previous EU Directive Staged Emission Standards;
- where feasible, ensure further abatement plant is installed on NRMM equipment e.g, Diesel Particulate Filters (DPF) conforming to defined and demonstrated filtration efficiency (load/duty cycle permitting);
- implementation of fuel conservation measures including instructions to throttle down or switch off idle construction equipment; switch off the engines of trucks while they are waiting to access the site and while they are being loaded or unloaded, ensure equipment is properly maintained to ensure efficient fuel consumption.

Successful implementation of the above mitigation measures would ensure that emissions from the construction phase and NRMM used during construction phase result in a 'not significant' effect on air quality.

## 5.3 Construction Vehicle Emissions

Information on traffic movements anticipated during construction works was unavailable for the completion of the Air Quality Appraisal. However, the development quantum is not anticipated to result in movements above the Greater Cambridgeshire SPD criterion. The duration of movements will be short-term in nature and are not considered further within the context of this assessment. Therefore, additional road vehicle trips during the construction phase of the scheme can be considered to have insignificant effects on air quality.



## 6.0 TRAFFIC EMISSIONS ASSESSMENT

### 6.1 Trip Generation

The proposed development is predicted to generate 575 movements as a 24-hour AADT onto Haverhill Road, with a negligible HDV proportion (i.e. <2%). The majority of movements are predicted to head northwards towards Babraham Road. Haverhill Road has an existing Annual Average Weekday Traffic (AAWT) of 3,545 and therefore not considered to be a source of pollution for the introduction of a sensitive development. The closest road network with an AADT of more than 10,000 is that of Babraham Road 1.4km north of the site. Trip generation on Babraham Road would be less than 500 AADT on the basis that there is a 80/20% split northbound / southbound from the site access onto Haverhill Road, with a further 66% / 34% northwest / southeast at the Haverhill Road / Babraham Road junction.

The most trip intensive periods of the additional movements are between 10:00 to 11:00 in the morning and 14:00 to 15:00 on the afternoon. Given the weekday network peak hours on Haverhill Road occur between 08:00 to 09:00 and 17:00 to 18:00, the impact of the development traffic is unlikely to have a determinantal effect on the operation of the local road links or junctions.

To minimise congestion with regard to the site access, the existing 30mph limit on Haverhill Road will be extended northwards alongside the widening of the road immediately outside of the proposed site access to accommodate a right hand turn into the development.

### 6.2 Traffic Screening Assessment

A screening assessment in accordance with the Greater Cambridgeshire SPD has been undertaken to identify whether further assessment of traffic emissions generated from the proposed development is required. The following aspects of the trip generation and associated infrastructure are considered relevant in the screening assessment:

- the proposed development will not significantly alter the road network;
- the proposed development will not introduce additional LDV flows in excess of 500AADT or HDV flows in excess of 100 AADT on roads of >10,000AADT outside of AQMAs;
- the proposed development does not include any underground car parking; and
- the proposed development is not in proximity to any existing prescribed processes or busy road networks

On the basis of the above information further assessment of traffic emissions is not considered to be required with impacts likely to have insignificant effects.

### 6.3 Mitigation Measures

Based upon the trip generation and routing on the local road network, the impact of the proposed development on local air quality is considered to be not significant. Following the requirements of the Greater Cambridgeshire SPD, provision would be made for the incorporation of electric charging points, in accordance with the indicative car parking provisions of the Greater Cambridgeshire SPD. Car and cycle parking will be the subject of a reserved matters submissions, with sufficient space available within the site for parking to be provided in accordance with the Councils adopted standards.

Reference should be made to the Transport Assessment and accompanying documentation for further details of transport related mitigation measures, including the Site Travel Plan.

## 7.0 CONCLUSIONS

The findings of the assessment are that:

- with respect to the construction phase, the works are predicted to result in a medium risk of dust amenity impacts in the absence of mitigation. With the effective implementation of the defined best practice dust mitigation measures the effects are considered to be 'not significant';
- the effect on local air quality from the additional traffic movements on the local road networks is considered to be not significant;
- mitigation measures have been recommended, in line with the Greater Cambridgeshire SPD and the South Cambridgeshire Local Plan.

On this basis it is concluded that the effects of the proposed development on air quality are 'not significant'. As such, it is considered that air quality does not represent a material constraint to the development proposals, which conform to the principles of National Planning Policy Framework and South Cambridgeshire Local Plan Policy.

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