BWB
A CAF GROUP COMPANY

ENVIRONMENT

Richborough Estates Limited
Land situated to the east of Brascote Lane and south of Arnold's Crescent Newbold Verdon
Air Quality Assessment

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Notice

EXECUTIVE SUMMARY

BWB Consulting Limited was appointed by Richborough Estates Limited to undertake an air quality assessment for an outline planning application for construction of up to 135 dwellings with associated landscaping, open space, drainage infrastructure and associated works (all matters reserved except access from Brascote Lane).

The Site is located within the administrative area of Hinckley & Bosworth Borough Council. The Site is not located within an existing Air Quality Management Area.

A qualitative construction phase dust assessment was undertaken in accordance with Institute of Air Quality Management guidance and measures were recommended to minimise emissions during construction activities. With the implementation of these mitigation measures the impact of construction phase dust emissions was considered to be 'not significant' in accordance with Institute of Air Quality Management guidance.

A detailed operational road traffic impact assessment will be undertaken and pollutant concentrations will be predicted across the Site to determine the suitability of the Site for its proposed use with regards to the current relevant air quality objectives.

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Appendix A: Glossary of Terms
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Appendix C: Planning Policy and Legislation

1. INTRODUCTION

1.1 BWB Consulting Limited (BWB) was instructed by Richborough Estates Limited (the Client) to undertake an air quality assessment for a residential development at land situated to the east of Brascote Lane and south of Arnold's Crescent, Newbold Verdon.

1.2 The planning application boundary extends in total to 13.77ha hectares (hereinafter referred to as the "Combined Site"), which comprises the following:

- 6.91 hectares of land to the east of Brascote Lane and south of the Thurlaston Brook, as shown shaded grey on the phased boundary plan shown in **Appendix A,** which benefits from an extant planning permission under reference 22/00277/OUT, for the purpose only of providing access/egress to the public highway known as Brascote Lane (hereinafter referred to as "Phase 1"); and
- 6.86 hectares of land to the south of Arnold's Crescent and north of the Thurlaston Brook, as shown shaded pink on the phased boundary plan shown in **Appendix A**, for up to 135 dwellings with associated landscaping, open space, drainage infrastructure and associated works (hereinafter referred to as "Phase 2").

1.3 On the basis Phase 1 has the benefit of planning permission the scope of this air quality validation report focusses upon Phase 2, (hereinafter referred to as the "Site").

1.4 The assessment considers construction phase dust impacts and operational phase road traffic emissions. A qualitative construction phase dust assessment was undertaken in accordance with relevant guidance. An operational road traffic impact assessment will also be undertaken, in addition to a Site suitability assessment.

1.5 This report is necessarily technical in nature so to assist the reader a glossary of air quality terminology can be found in **Appendix B**.

Site Setting

1.6 The Site is located off Arnold's Crescent, adjacent to Brascote Lane, within the administrative area of Hinckley & Bosworth Borough Council (HBBC). The Site is not located within an existing Air Quality Management Area (AQMA).

1.7 The Site currently comprises open green space. The Site is bordered to the north by residential dwellings. To the east and south of the Site is open green space and agricultural land. An outline planning application (planning reference: 23/01037/OUT) was submitted in October 2023 and granted planning permission in May 2024 for Phase 1 of the development, which will be located to the south of the Site. The Site is bordered to the west by residential dwellings in addition to allotments with Brascote Lane located beyond. **Figure 1.1** details the location of the proposed development.

1.8 Principal air pollution sources in the vicinity of the Site are likely to comprise road traffic emissions from Brascote Lane.

Proposed Development

1.9 The proposed development comprises an outline planning application for construction of up to 135 dwellings with associated landscaping, open space, drainage infrastructure and associated works (all matters reserved except access from Brascote Lane) at land situated to the east of Brascote Lane and south of Arnold's Crescent, Newbold Verdon. The proposed development masterplan is detailed in **Appendix C**.

Figure 1.1: Site Location

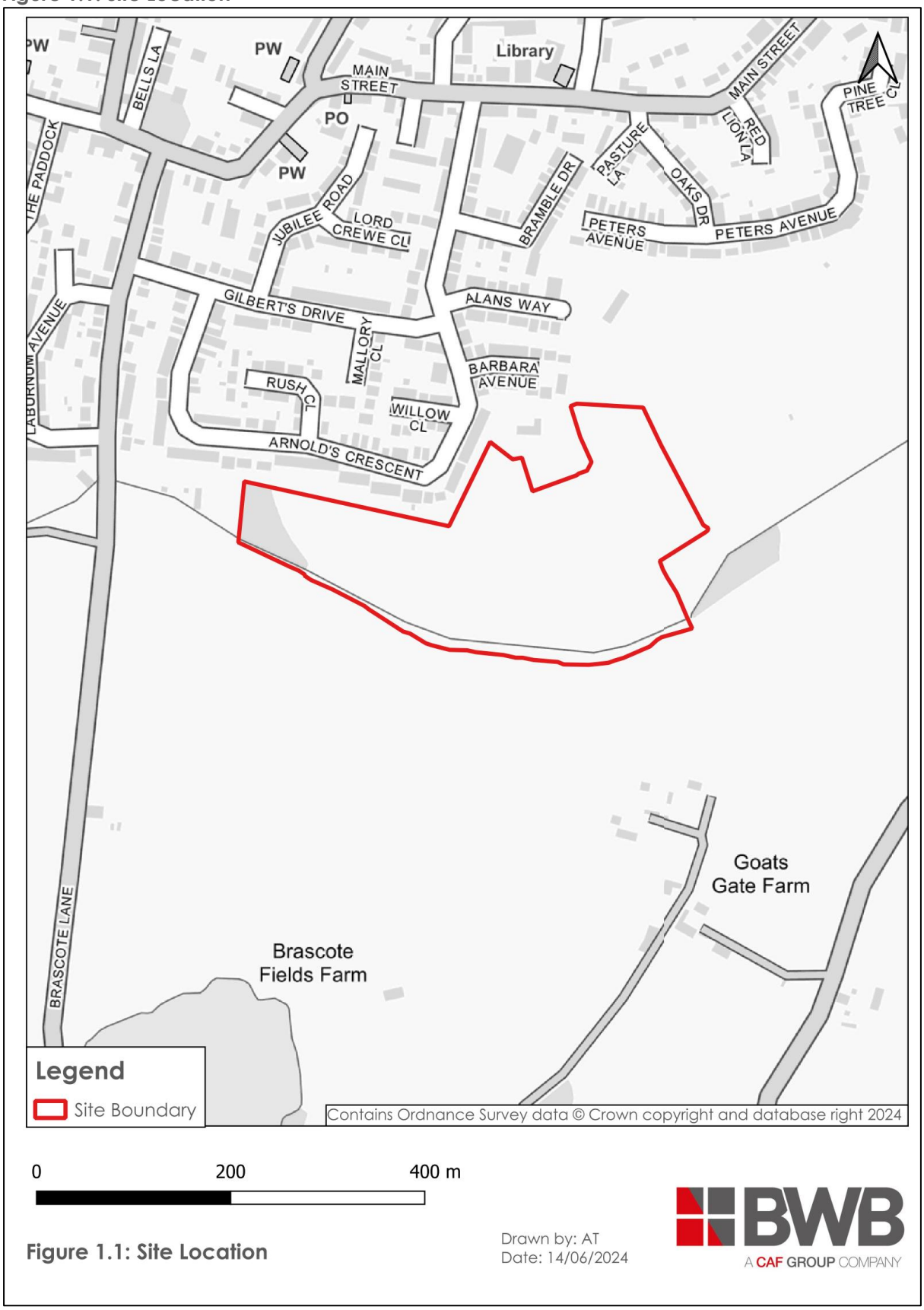

Figure 1.1: Site Location

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2. LEGISLATION, PLANNING POLICY & GUIDANCE

National Legislation and Planning Policy

2.1 The following national legislation and planning policy is relevant to air quality and was considered in the undertaking of the assessment. A summary of the relevant national legislation and planning policy is provided in **Appendix D**:

- European Parliament, EU 2008 ambient Air Quality Directive (2008)[1];
- HMSO, Air Quality (England) Regulations (2000)[2];
- HMSO, Environment Act (1995)[3];
- HMSO, Environment Act (2021)[4];
- HMSO, Air Quality (England) Regulations (2002)[5];
- HMSO, Air Quality Standards Regulations (2010)[6];
- Department for Environment, Air Quality Strategy (1997)[7];
- Department for the Environment, Food and Rural Affairs, Air Quality Strategy (2007)[8];
- Department for the Environment, Food and Rural Affairs, Air Quality Strategy (2023)[9];
- Department for the Environment, Food and Rural Affairs, The Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020)[10];
- HMSO, The Environmental Targets (Fine Particulate Matter) (England) Regulations (2023)[11];
- Ministry of Housing, Communities and Local Government, National Planning Policy Framework (NPPF) (2023)[12]; and
- Ministry for Housing, Communities and Local Government, Planning Practice Guidance (PPG) for air quality (2019)[13].

Local Planning Policy

2.2 The following local planning policy was considered in the undertaking of the assessment and a summary is provided in **Appendix D**:

- Hinckley & Bosworth Borough Council, Local Development Framework Core Strategy (2009)[14]; and
- Hinckley & Bosworth Borough Council, Site Allocations and Development Management Policies DPD (2016)[15].

[1] European Parliament (2008) Council Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe
[2] HMSO (2000) Statutory Instrument 2000 No. 928, The Air Quality (England) Regulations 2000 (as amended), London: HMSO
[3] HMSO (1995) The Environment Act 1995, London: TSO
[4] HMSO (2021) The Environment Act 2021, London: TSO
[5] HMSO (2002) Statutory Instruments 2002 No. 3043, The Air Quality (England) (Amendment) Regulations 2002, London: HMSO
[6] HMSO (2010) Statutory Instruments 2010 No. 1001 Air Quality Standards Regulations 2010. London: HMSO
[7] Department of the Environment (DoE) (1997) The UK National Air Quality Strategy, London: HMSO
[8] Department of the Environment, Food and Rural Affairs (Defra) (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, London: HMSO
[9] Department for the Environment, Food and Rural Affairs (Defra) (2023) Air Quality Strategy: Framework for Local Authority
[10] Department of the Environment, Food and Rural Affairs (Defra) (2020) The Environment (Miscellaneous Amendments) (EU Exit) Regulations, London: HMSO
[11] HMSO (2023) Statutory Instruments 2023 No. 96 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023
[12] Ministry of Housing, Communities & Local Government (2023) National Planning Policy Framework, HMSO London
[13] Ministry for Housing, Communities and Local Government (2019) Planning Practice Guidance Air Quality
[14] Hinckley & Bosworth Borough Council (2009) Local Development Framework
[15] Hinckley & Bosworth Borough Council (2016) Site Allocations and Development Management Policies DPD

Air Quality Assessment Guidance

2.3 The following guidance was utilised in the air quality assessment:

- Defra, Local Air Quality Management Technical Guidance (LAQM.TG(22)) (2022)[16];
- Institute of Air Quality Management, Guidance on the Assessment of Dust from Demolition and Construction (2024)[17]; and
- Institute of Air Quality Management and Environmental Protection UK, Land-Use Planning and Development Control: Planning for Air Quality (2017)[18].

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[16] Defra (2022) Local Air Quality Management Technical Guidance LAQM.TG(22)
[17] Institute of Air Quality Management (2024) Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, London
[18] Institute of Air Quality Management and Environmental Protection UK (2017) Land-Use Planning and Development Control: Planning for Air Quality

3. METHODOLOGY

Consultation with Hinckley & Bosworth Borough Council

3.1 Consultation was undertaken with HBBC on 26th April 2024. At the time of writing, no response was received. The methodology that was outlined to HBBC is provided below:

- Construction Phase - A construction phase dust assessment was undertaken and relevant measures to mitigate construction phase dust emissions were recommended. The assessment was undertaken in accordance with guidance provided by the Institute of Air Quality Management (IAQM)[17].
- Operational Phase – A detailed operational phase road traffic emissions assessment was undertaken to consider the impact of development-generated traffic on local air quality and predict pollutant concentrations at the Site. The dispersion model ADMS-Roads was used to model concentrations of oxides of nitrogen (NOx) and particulate matter (PM_{10} and $PM_{2.5}$) at identified existing receptor locations for both without and with development scenarios. The change in pollutant concentrations as a result of development-generated traffic was then calculated. The assessment was undertaken in accordance with Defra Local Air Quality Management Technical Guidance (LAQM.TG22)[16] and IAQM and Environmental Protection UK (EPUK)[18]. Pollutant concentrations were predicted across the Site to consider the suitability of the Site for residential use.

3.2 Full details of the methodology used in the assessment, as provided to with HBBC, are provided below.

Construction Phase Dust Assessment

3.3 An assessment of the potential impacts arising from the construction of the proposed development was undertaken in accordance with IAQM Guidance[17]. The full assessment methodology is not reproduced within this report but a summary of the assessment steps are provided below:

- Step 1 – screen the requirement for a more detailed assessment. No assessment is required if there are no receptors within a certain distance of the works.
- Step 2 – assess the risk of dust impacts separately for each of the four activities considered (demolition, earthworks, construction and trackout).
    - Step 2A – determine the potential dust emission magnitude for each of the four activities;
    - Step 2B – determine the sensitivity of the area;
    - Step 2C – determine the risk of dust impacts by combining the findings of steps 2A and 2B.
- Step 3 – determine the site-specific mitigation for each of the four activities; and
- Step 4 – examine the residual effects and determine significance.

4. BASELINE CONDITIONS

Local Air Quality Management

4.1 The Site is not located within an existing AQMA. The closest AQMA to the Site is the Blaby District Council (BDC) AQMA 3 which is located 8.2km east of the Site.

Local Air Quality Monitoring

Nitrogen Dioxide

4.2 HBBC undertakes NO_2 monitoring using diffusion tubes. The neighbouring BDC undertakes NO_2 monitoring using a network of diffusion tubes and automatic monitoring. The closest monitoring location to the Site is HBBC 8 which is located 5.6km south of the Site.

4.3 Bias adjusted NO_2 monitoring results, for the locations in the vicinity of the Site, are detailed in **Table 4.1**. At the time of assessment 2020 and 2021 monitoring data were available and therefore were included in the review. The IAQM released a position statement[19] in August 2021 with regard to 2020 and 2021 monitoring datasets. Due to the influence of the COVID-19 pandemic lockdown restrictions, 2020 and 2021 monitoring data are not considered representative of normal conditions. 2022 data were available and included in the review. As the IAQM has not released a position statement in relation to 2022 monitoring data, 2022 was considered representative of normal conditions.

Table 4.1: HBBC and BDC NO_2 Monitoring Data in 2015– 2022

ID	Grid Reference (X,Y)	Site Type	Distance from and direction to Site boundary	Monitored Annual Average Concentration (µg.m^{-3})							
				2015	2016	2017	2018	2019	2020	2021	2022
9	446696, 297756	Suburban	5.6km south	22.8	23.9	21.7 +	20.9	23.3	18.8	17.2	17.7
99	453140, 303311	Roadside	8.1km east	-	-	-	-	-	-	17.3	19.4
CM4	453217 303310	Roadside	8.1km east	**47.9**	24.9	37.1	**47.3**	38.4	23.3	26.9	23.3
54	453592, 303415	Roadside	8.6km east	-	-	20.4	32.5	26.6	22.1	20.7	22.6

-data not available, data presented to available accuracy, + data capture less than 75%,

[19] Institute of Air Quality Management (2021) Position Statement: Use of 2020 and 2021 Monitoring Datasets

4.4 Monitored annual mean NO_2 concentrations were below the current annual mean objective for England at all reported monitoring locations in all years where data is available with the exception of in 2015 and 2018 at CM4.

4.5 Monitored annual mean NO_2 concentrations at monitoring locations 9 and CM4 showed an overall decreasing trend. There were only two years of data for Location 99 and so a trend could not be determined. An overall increasing trend was monitored at location 54. All locations detailed in **Table 4.1** measured year on year fluctuations in annual mean NO_2 concentrations.

4.6 Monitoring location 9 is an urban centre location along Wood Street in the centre of Earl Shilton in close proximity to a junction where queuing traffic is expected. Given the location of monitoring location 9, concentrations on Site are not expected to exceed the current annual mean objective. Locations CM4, DT99 and DT54 are all located in close proximity to the M1 Motorway and A47 Hinckley Road where traffic flows are expected to be higher than those adjacent to the Site. Therefore, pollutant concentrations are expected to be higher at these locations than at the Site.

Particulate Matter (PM_{10})

4.7 No PM_{10} monitoring is undertaken by HBBC. The neighbouring BDC undertakes PM_{10} monitoring using automatic monitors in one location 10.5km south west of the Site.

Table 4.2: BDC PM_{10} Monitoring Data in 2015 – 2022

ID	Grid Reference X,Y	Site Type	Distance from and direction to Site boundary	Monitored Annual Average Concentration (µg.m^{-3})							
				2015	2016	2017	2018	2019	2020	2021	2022
CM1	454482, 298573	Roadside	10.5km south west	15.8	12	14.8	11	11.8	11.5	10.8	11.7

Data presented to available accuracy

4.8 Monitored PM_{10} concentrations were below the annual mean objective in all years from 2015 – 2022. An overall decrease in concentration was monitored between 2015 and 2022 with some year on year fluctuations.

4.9 CM1 is located in close proximity to the M1 Motorway where traffic flows and therefore pollutant concentrations are expected to be higher than at the Site.

Particulate Matter ($PM_{2.5}$)

4.10 No $PM_{2.5}$ monitoring is undertaken by HBBC. The neighbouring BDC undertakes $PM_{2.5}$ monitoring using automatic monitors. The closest monitoring location to the Site is 10.5km south west.

Table 4.3: BDC $PM_{2.5}$ Monitoring Data in 2015 – 2022

ID	Grid Reference X,Y	Site Type	Distance from and direction to Site boundary	Monitored Annual Average Concentration (µg.m^{-3})							
				2015	2016	2017	2018	2019	2020	2021	2022
CM5	453594, 299549	Roadside	9.3km south west	-	14	**20.4**	16	16.9	8.4	8.4	8
CM1	454482, 298573	Roadside	10.5km south west	11.1	8.4	10.4	7.7	8.3	8.1	7.6	5.3

Data not available, data presented to available accuracy

4.11 Monitored $PM_{2.5}$ concentrations were below the current annual mean objective in all years from 2015 to 2022 at CM1 and in all years at CM5 between 2016 and 2022 with the exception of 2017. Concentrations were below the annual mean interim target of 12µg.m^{-3} to be achieved by 2028 in addition to the future annual mean objective of 10µg.m^{-3} to be achieved by 2040 at CM5 between 2020 and 2022. Concentrations were below the annual mean interim target at CM1 in all years and below the future annual mean objective in 2016 and between 2018 and 2022.

4.12 CM5 experienced a decrease in monitored concentrations between 2016 and 2022 and CM1 experienced a decrease in monitored concentrations between 2015 and 2022. Both locations monitored year on year fluctuations.

4.13 CM1 is located in close proximity to the M1 Motorway where traffic flows and therefore pollutant concentrations are expected to be higher than at the Site. CM5 is located on the edge of the Leicester urban area was therefore not considered to be representative of the Site. Concentrations at CM5 were below the relevant annual mean objectives, therefore concentrations at the Site are likely to be below the relevant annual mean objectives.

5. CONSTRUCTION PHASE DUST ASSESSMENT

5.1 The construction phase of the proposed development will involve a number of activities which have the potential to impact on local air quality.

5.2 The location of sensitive receptors in relation to construction activities will affect the potential for such construction activities to cause dust soiling, nuisance and local air quality impacts. Meteorological conditions and the use of control measures will also contribute to the effects experienced.

Step 1: Screen the Need for a Detailed Assessment

5.3 Step 1 of the IAQM guidance[17] involves a screening assessment to consider whether a more detailed construction phase dust assessment is required.

5.4 In accordance with the guidance, a detailed assessment is required if:

- Human receptors are located within 250m of the boundary of the site or 50m of routes used by construction vehicles on the public highways, up to 250m from the site entrances; or
- Ecological receptors are located within 50m of the boundary of the site or 50m of routes used by construction vehicles on the public highways, up to 250m from the site entrances.

5.5 From a review of the Multi Agency Geographic Information for the Countryside (MAGIC) website[20], no ecological designations were identified within the above screening distance and therefore the impact on ecological designations was not considered further. However human receptors are located within the above screening distances, with the closest of these receptors located off Arnold's Crescent. A construction phase assessment was therefore undertaken.

Step 2: Assess the Risk of Dust Impacts

Step 2A: Define the Potential Dust Emission Magnitude

5.6 The dust emission magnitudes for the construction activities were defined using the criteria detailed in the IAQM guidance[17] as detailed in **Table 5.1**. Demolition is not proposed as part of the development and therefore was not considered further in the assessment.

[20] Defra, Multi Agency Geographic Information for the Countryside (MAGIC) [http://magic.defra.gov.uk/]

Table 5.1: Dust Emission Magnitude Criteria and Definition

Activity	IAQM Dust Emission Magnitude	IAQM Dust Emission Magnitude Criteria
Earthworks	Large	Total site area >110,000m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height.
	Medium	Total site area 18,000m^2 – 110,000m^2, moderately dusty soil type (e.g. silt), 5 - 10 heavy earth moving vehicles active at any one time, formation of bunds 3m - 6m in height.
	Small	Total site area <18,000m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height.
Construction	Large	Total building volume >75,000m^3, on site concrete batching, sandblasting.
	Medium	Total building volume 12,000m^3 – 75,000m^3, potentially dusty construction material (e.g. concrete), on site concrete batching.
	Small	Total building volume <12,000m^3, construction material with low potential for dust release (e.g. metal cladding or timber).
Trackout	Large	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m.
	Medium	20 - 50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m.
	Small	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.

5.7 The following dust emission magnitudes were defined for the proposed development:

- Earthworks –The Site has a total site area is between 18,000m^2 and 110,000m^2. Therefore the dust emission magnitudes for earthworks was defined as **Medium.**
- Construction – The proposed development will require the construction of 135 dwellings with a total building volume of over 75,000m^3. The dust emission magnitude for construction was therefore defined as **Large.**
- Trackout – Due to the magnitude of the Site it is unlikely that there will be more than 20 outward HDV movements in any one day. The dust emissions magnitude was therefore defined as **Small.** The trackout distance utilised in the assessment was set to 250m from the Site access in accordance with the guidance[16].

5.8 A summary of the defined dust emission magnitudes for the development are provided in **Table 5.2**.

Table 5.2: Summary of Project Defined Dust Emission Magnitudes

Activity	Dust Emission Magnitude
Earthworks	Medium
Construction	Large
Trackout	Small

Step 2B: Define the Sensitivity of the Area

5.9 The assessment requires the determination of the sensitivity of the area for the purposes of dust soiling and human health impacts. The sensitivity of the Site takes into account the specific receptors in the vicinity of the Site, the proximity and number of those receptors, the local background concentration of PM_{10} and site-specific factors. **Figure 5.1** was utilised to determine the number of receptors located within the distance bands provided in the IAQM guidance[17] for determining receptor sensitivity.

5.10 The sensitivity of the area is defined below, in accordance with IAQM criteria[17] and summarised in Table 5.3.

- Dust Soiling – there are between 10 and 100 highly sensitive residential receptors located within 20m of the proposed Site boundary and the assumed routes to be used by construction vehicles. The sensitivity of the area to dust soiling impacts was therefore defined as **High.**
- Human Health – within 20m of the proposed Site boundary and the assumed routes to be used by construction vehicles, between 10 and 100 highly sensitive residential receptors are located in an area with to a background annual mean PM_{10} level below 24µg.m^{-3} as provided by Defra background mapping[21]. The sensitivity of the area to human health impacts was therefore defined as **Low.**

Table 5.3: Determination of the Sensitivity of the Area

Potential Impact	Sensitivity		
	Earthworks	Construction	Trackout
Dust Soiling	High	High	High
Human Health	Low	Low	Low

[21] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/background-maps/

Figure 5.1: Construction Phase Assessment Dust Distance Buffers

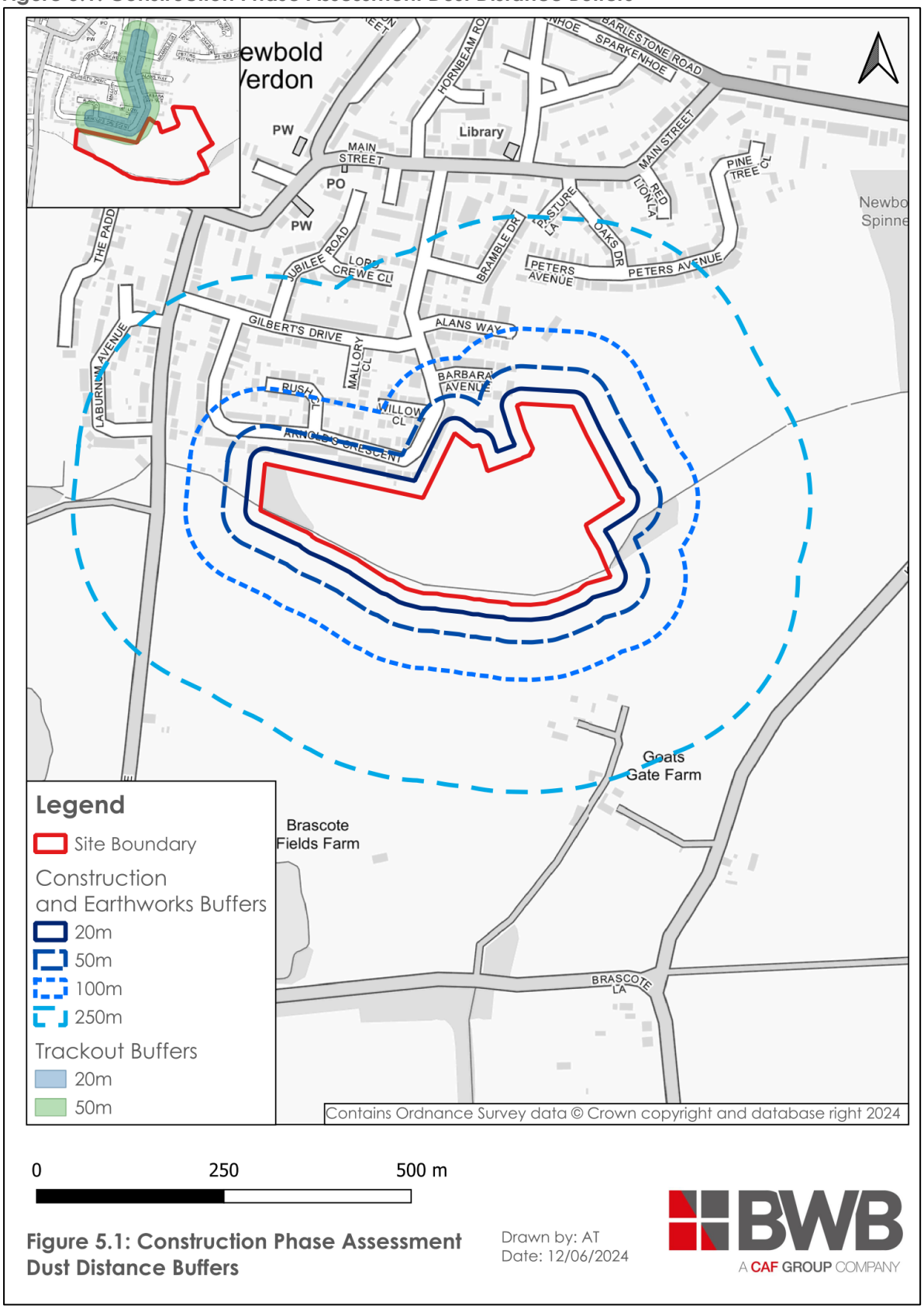

Figure 5.1: Construction Phase Assessment Dust Distance Buffers

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Date: 12/06/2024

Step 2C: Define the Risk of Impacts

5.11 The dust emission magnitude determined in Step 2A is then combined with the sensitivity of the area determined in Step 2B to define the risk of dust impacts with no mitigation applied. The results of this assessment are detailed in **Table 5.4.**

Table 5.4: Summary Dust Risk Table to Define Site Specific Risk

Activity	Step 2A: Dust Emission Magnitude	Step 2B: Sensitivity of the Area	Step 2C: Risk of Dust Impacts
Dust Soiling Effects on People and Property			
Earthworks	Medium	High	Medium Risk
Construction	Large	High	High Risk
Trackout	Small	High	Medium Risk
Human Health Impacts			
Earthworks	Medium	Low	Low Risk
Construction	Large	Low	Low Risk
Trackout	Small	Low	Negligible Risk

Step 3: Site-Specific Mitigation

5.12 The risk of dust impacts, defined in Step 2C of the assessment, is used to determine the mitigation measures required to minimise the emission of dust during construction phase activities. The IAQM guidance[17] provides details of highly recommended and desirable mitigation measures which are commensurate with the risk of dust impacts defined in Step 2C for construction, earthworks and trackout activities. Where the mitigation measures are general in nature, the highest risk category was applied in accordance with the guidance[17]. The highest risk category identified was 'High Risk' and the recommended mitigation taken from the IAQM guidance[17] is detailed in **Table 5.5** and **Table 5.6**.

Table 5.5: Mitigation Measures for a High Risk Site

Category	Mitigation Measures for a High Risk Site	
	Highly Recommended	Desirable
Communication	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	None
	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may	

Category	Mitigation Measures for a High Risk Site	
	Highly Recommended	**Desirable**
	be the environmental manager/engineer or the site manager.	
	Display the head or regional office contact information.	
	Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections.	
Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken.	None
	Make the complaints log available to the local authority when asked.	
	Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.	
	Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.	
Monitoring	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the site boundary, with cleaning to be provided as necessary.	None
	Carry out regular site inspections to monitor compliance with the DMP, record inspections results, and make an inspection log available to the local authority when asked.	

Category	Mitigation Measures for a High Risk Site	
	Highly Recommended	**Desirable**
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	
Preparing and maintaining the site	Plan the site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	None
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	
	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period.	
	Avoid site runoff of water or mud.	
	Keep site fencing, barriers and scaffolding clean using wet methods.	
	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	
	Cover, seed or fence stockpiles to prevent wind whipping.	
Operating vehicle/ machinery and sustainable travel	Ensure all vehicles switch off engines when stationary – no idling vehicles.	None
	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	
	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable control measures provided, subject to the approval of the nominated undertaker with the agreement of the local authority, where appropriate).	
	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	
	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such	None

Category	Mitigation Measures for a High Risk Site	
	Highly Recommended	**Desirable**
	as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	
	Ensure an adequate water supply on site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	
	Used enclose 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 such equipment wherever appropriate.	
	Ensure equipment is readily available on site to clean and dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	
Waste Management	Avoid bonfires and burning of waste materials.	None

Table 5.6: Mitigation Measures Specific to Earthworks, Construction and Trackout

Category	Mitigation Measures	
	Highly Recommended	**Desirable**
Earthworks (Medium Risk Site)	None	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
		Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
		Only remove the cover in small areas during work and not all at once.
Construction (Medium Risk Site)	Avoid scabbling (roughening of concrete surfaces) if possible.	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	
Trackout (Medium Risk Site)	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any materials tracked out of the site. This may require the sweeper being continuously in use.	None
	Avoid dry sweeping of large areas.	

Category	Mitigation Measures	
	Highly Recommended	Desirable
	Ensure vehicles entering and leaving the sites are covered to prevent escape of materials during transport.	
	Inspect on-site haul routes for integrity and instigate 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, or mobile water bowsers and regularly cleaned.	
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	
	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	
	Access gates to be located at least 10m from receptors where possible.	

Step 4: Determine Significant Effects

5.13 In accordance with IAQM guidance[17], with the implementation of the mitigation measures detailed in Step 3, the residual impacts from the construction phase are considered to be 'not significant'.

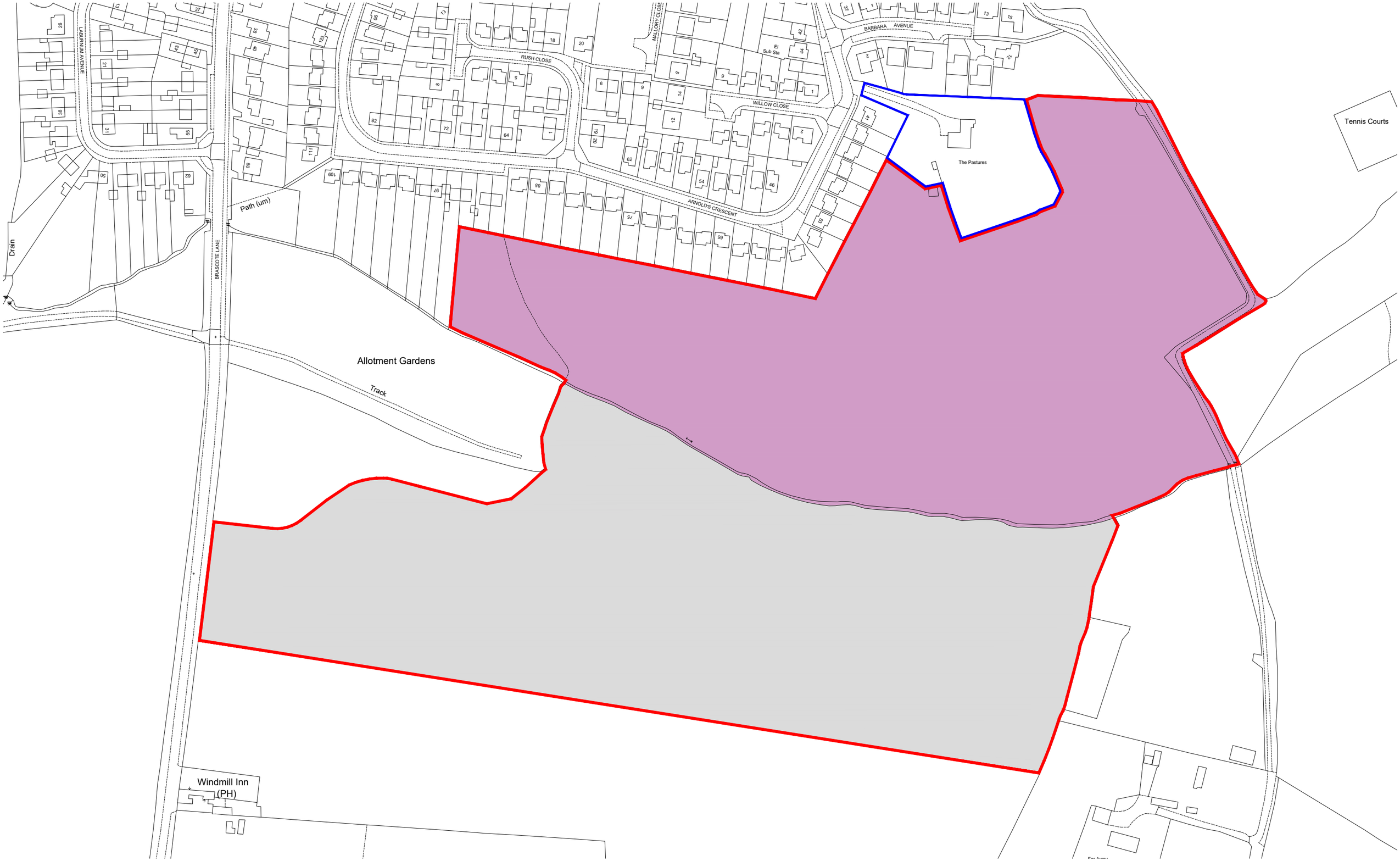
6. CONCLUSION

6.1 An air quality impact assessment will be undertaken for the proposed residential development comprising up to 135 dwellings at land east of Brascote Lane, Newbold Verdon ('the Site').

6.2 A qualitative construction phase assessment was undertaken and measures were recommended to minimise emissions during construction activities. With the implementation of these mitigation measures the impact of construction phase dust emissions is considered to be 'not significant' in accordance with IAQM guidance[17].

APPENDICES

APPENDIX A: PHASED BOUNDARY PLAN



0 20m 40m 60m 80m 100m

Status: Planning

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Client: Richborough

Project title: Land off Arnold's Crescent, Newbold Verdon

Drawing title: Phased Boundary Plan

Scale: 1:2000 (A3)
Date: June 2024
Drawn by: JMP
Checked by: LH
Drawing no.: 902832.36.05
Revision: -

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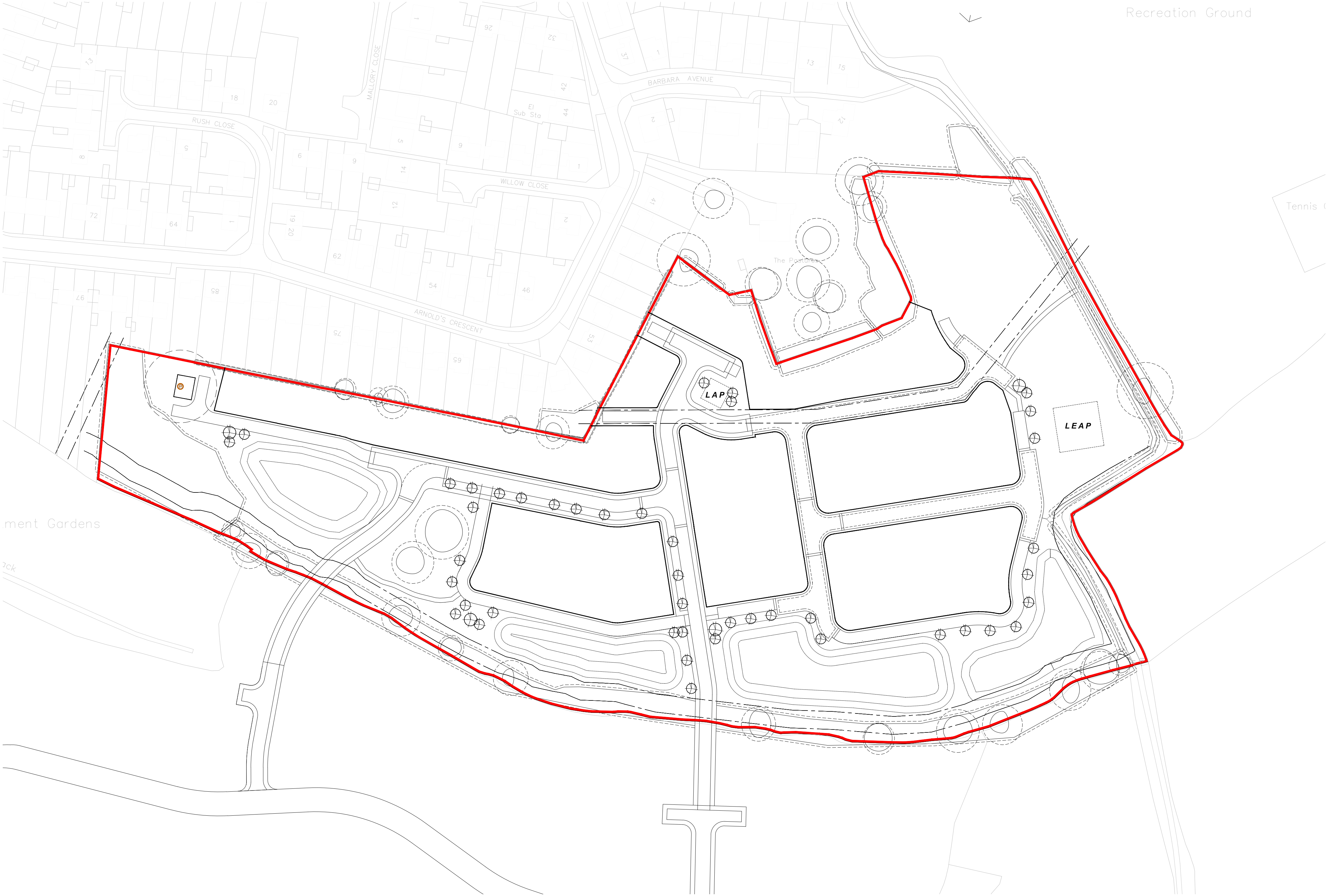
APPENDIX B: GLOSSARY OF TERMS

	Definition
AADT	Annual Average Daily Traffic flow.
Air quality objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedances within a specific timescale (see also air quality standard).
Air quality standard	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also air quality objective).
Annual mean	The average (mean) of the concentrations measured for each pollutant for one year. Usually this is for a calendar year, but some species are reported for the period April to March, known as a pollution year. This period avoids splitting winter season between two years, which is useful for pollutants that have higher concentrations during the winter months.
AQAP	Air Quality Action Plan.
AQMA	Air Quality Management Area.
AQS	Air Quality Strategy.
Defra	Department for Environment, Food and Rural Affairs.
EPUK	Environmental Protection UK.
Exceedance	A period of time where the concentrations of a pollutant is greater than, or equal to, the appropriate air quality standard.
HDV	Heavy Duty Vehicles (HGVs + buses and coaches)
HGV	Heavy Goods Vehicles.
IAQM	Institute of Air Quality Management.
LAQM	Local Air Quality Management.
LDV	Light Duty Vehicles (motorbikes, cars, vans and small trucks)
NO	Nitrogen monoxide, a.k.a. nitric oxide.
NO_2	Nitrogen dioxide.
NOx	Nitrogen oxides.
Percentile	The percentage of results below a given value.
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres.
micrograms per cubic metre ($\mu g.m^{-3}$)	A measure of concentration in terms of mass per unit volume. A concentration of $1\mu g.m^{-3}$ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.

APPENDIX C: PROPOSED DEVELOPMENT MASTERPLAN



Status **PLANNING**

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Client: Richborough

Project title: Land South of Arnold's Crescent Newbold Verdon

Drawing title: Development Framework Plan

Scale:	1:500@A0
Date:	June 2024
Drawn by:	JMP
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Drawing no.:	902832.36.03
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APPENDIX D: PLANNING POLICY AND LEGISLATION

National Legislation and Planning Policy

The UK Air Quality Strategy

D.1 European Union (EU) legislation forms the basis of air quality policy and legislation in the UK. The EU 2008 ambient Air Quality Directive[1] sets limits for ambient concentrations of air pollutants including nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$). The air quality standards and objectives are prescribed through the Air Quality (England) Regulations 2000[2], as amended, for the purpose of the Local Air Quality Management Framework. The Air Quality (England) Regulations were amended in 2002[5] and again in 2010[6], with miscellaneous amendments added in 2020[10] following the UK exit from the EU. Additionally, an updated $PM_{2.5}$ objective was published in 2023[9] with an interim target to be achieved by 2028[22].

D.2 The UK Government are required under the Environment Act 1995[3] to produce a national Air Quality Strategy (AQS). The AQS was first published in 1997[7] and was most recently reviewed and updated in 2007[8] and most recently reviewed and updated in 2023[9]. The AQS provides an overview of the Government's ambient air quality policy and sets out the air quality standards and objectives to be achieved and measures to improve air quality.

D.3 The Environment Act 2021[4] was granted Royal Assent in November 2021 and contains amendments to Part IV of the Environment Act 1995[3] with regard to the Local Air Quality Management regime. Under the Environment Act 2021[4], the Secretary of State must lay a statement before Parliament setting out progress made in meeting air quality objectives and standard in England and steps taken towards achieving the standards. The Environment Act 2021[4] also places responsibility on local authorities to co-operate with air quality partners in the preparation of Air Quality Action Plans and identification of measures which should be monitored within the Plan and dates by which they should be implemented.

D.4 Part IV of the Environment Act[3] requires local authorities in the UK to review local air quality within their administrative area and, if relevant air quality standards and objectives are likely to be exceeded, designate Air Quality Management Areas (AQMAs). Following the designation of an AQMA, local authorities are required to publish an Air Quality Action Plan (AQAP) detailing measures to be taken to improve local air quality and work towards meeting the relevant air quality standards and objectives.

National Planning Policy Framework

D.5 The National Planning Policy Framework (NPPF)[12] was amended in December 2023 and sets out the Government's planning policies for England and how these are expected to be applied.

D.6 The NPPF[12] recognises air quality within Section 15: Conserving and enhancing the natural environment, and states that:

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

[22] Defra (2023) Environmental Improvement Plan 2023, First revision of the 25 Year Environment Plan

[…]

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;

[…]

Ground conditions and pollution

[…]

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.

[…]

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."

D.7 With regard to assessing cumulative effects the NPPF[12] states:

"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.

[...]"

Planning Practice Guidance

D.8 The Planning Practice Guidance (PPG) for air quality[13] was updated in November 2019 and provides guiding principles on how the planning process can take account of the impacts of new development on air quality.

D.9 The PPG[13] sets out the following with regard to air quality and planning:

- *"What air quality considerations does planning need to address;*
- *What is the role of plan-making with regard to air quality;*
- *Air quality concerns relevant to neighbourhood planning;*
- *What information is available about air quality;*
- *When could air quality considerations be relevant to the development management process;*
- *What specific issues may need to be considered when assessing air quality impacts;*
- *How detailed does an air quality assessment need to be; and*
- *How can an impact on air quality be mitigated".*

D.10 The PPG[13] sets out the pollutants for which there are legally binding limits for concentrations and those which the UK also has national emissions reduction commitments.

D.11 The PPG[13] states that development plans may need to consider:

- *"what are the observed trends shown by recent air quality monitoring data and what would happen to these trends in light of proposed development and / or allocations;*
- *the impact of point sources of air pollution (pollution that originates from one place);*
- *the potential cumulative impact of a number of smaller developments on air quality as well as the effect of more substantial developments, including their implications for vehicle emissions;*
- *ways in which new development could be made appropriate in locations where air quality is or is likely to be a concern, and not give rise to unacceptable risks from pollution. This could, for example, entail identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable; and*
- *opportunities to improve air quality or mitigate impacts, such as through traffic and travel management and green infrastructure provision and enhancement".*

D.12 The PPG[13] also states what may be considered relevant to determining a planning application and these include whether a 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-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".*

D.13 The PPG[13] provides guidance regarding what should be included within an air quality assessment. Examples of potential air quality mitigation measures are also provided.

Local Planning Policy

Hinckley & Bosworth Local Development Framework Core Strategy

D.14 Hinckley & Bosworth Borough Council adopted the Local Development Framework Core Strategy in December 2009 which sets out the long-term vision for Hinckley & Bosworth. A review of the Local Development Framework Core Strategy did not indicate any policies relating to air quality in the area of the Site.

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